

7cdFHWA-Indiana Environmental Document
CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM
GENERAL PROJECT INFORMATION

Road No./County:	US 41 at County Road (CR) 100 W., Gibson County, Indiana
Designation Number(s):	1800223
Project Description/Termini:	Intersection Improvement Project, approximately 2 miles south of SR 64 to approximately 2.41 miles south of SR 64

X	Categorical Exclusion, Level 2 – Required Signatories: INDOT DE and/or INDOT ESD
	Categorical Exclusion, Level 3 – Required Signatories: INDOT ESD
	Categorical Exclusion, Level 4 – Required Signatories: INDOT ESD and FHWA
	Environmental Assessment (EA) – Required Signatories: INDOT ESD and FHWA
	Additional Investigation (AI) – The proposed action included a design change from the original approved environmental document. Required Signatories must include the appropriate environmental approval authority

Approval

_____	_____
INDOT DE Signature and Date	INDOT ESD Signature and Date

FHWA Signature and Date	

Release for Public Involvement

 _____	5/27/2021 _____
INDOT DE Initials and Date	INDOT ESD Initials and Date

Certification of Public Involvement

INDOT Consultant Services Signature and Date

INDOT DE/ESD Reviewer Signature and Date: _____

Name and Organization of CE/EA Preparer: Caroline Tegeler, HNTB

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Part I – Public Involvement

Every Federal action requires some level of public involvement, providing for early and continuous opportunities throughout the project development process. **The level of public involvement should be commensurate with the proposed action.**

Does the project have a historic bridge processed under the Historic Bridges PA*?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If No, then: Opportunity for a Public Hearing Required?	<input type="checkbox"/>	<input type="checkbox"/>

*A public hearing is required for all historic bridges processed under the Historic Bridges Programmatic Agreement between INDOT, FHWA, SHPO, and the ACHP.

Discuss what public involvement activities (legal notices, letters to affected property owners and residents (i.e. notice of entry), meetings, special purpose meetings, newspaper articles, etc.) have occurred for this project.

Notice of Entry letters were mailed to potentially affected property owners near the project area on June 25, 2019, notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix G, page 1.

The project will meet the minimum requirements described in the current Indiana Department of Transportation (INDOT) Public Involvement Manual which requires the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. Therefore, a legal notice will appear in a local publication contingent upon the release of this document for public involvement. This document will be revised after the public involvement requirements are fulfilled.

Public Controversy on Environmental Grounds

Discuss public controversy concerning community and/or natural resource impacts, including what is being done during the project to minimize impacts.

At this time, there is no substantial public controversy concerning impacts to the community or to natural resources.

Part II - General Project Identification, Description, and Design Information

Sponsor of the Project: INDOT INDOT District: VincennesLocal Name of the Facility: US 41 and CR 100 WestFunding Source (mark all that apply): Federal State Local Other*

*If other is selected, please identify the funding source: _____

PURPOSE AND NEED:

The need should describe the specific transportation problem or deficiency that the project will address. The purpose should describe the goal or objective of the project. The solution to the traffic problem should NOT be discussed in this section.

The need for this project is a high crash rate at the signalized intersection of US 41 and CR 100 W just south of Princeton, in Gibson County, Indiana.

The crash analysis prepared for the mini-scope indicated that there were 14 crashes over a three-year period from October 2013 to September 2016. The index of crash cost (Icc) and index of crash frequency (Icf) were calculated using RoadHAT. An Icc or Icf greater than 1.0 indicates that the intersection is a "high crash" location. A "high crash"

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location is defined as a location where the crash frequency or cost is higher than expected given the functional classification and traffic volume. The lcc for the intersection is 2.08 and the lcf is 0.40.

Updated crash data for October 2014 to April 2019 was also evaluated. There were 32 crashes over the 4.5- year period. Crashes were refined to focus only on crashes that were related to the intersection. The most common crash types were rear ends and right-angle crashes, which are typically severe crashes. Other crash types that resulted in personal injury include left turn and same direction sideswipe.

There were 18 rear end crashes at this intersection, and more than half were severe crashes. One of the rear end crashes involved a semi-trailer and was fatal. There were twice the amount of rear end crashes that occurred on the US 41 southbound approach compared to US 41 northbound. There is a hillcrest north of the intersection on US 41 that limits sight distance for southbound traffic approaching the CR 100 W. intersection. Right-angle crashes occurred at the intersection. Of the 6 right angle crashes at the intersection during this time period, 2 were fatal. One of the fatal right-angle crashes involved a semi-trailer (Appendix I, pages 1-16).

The purpose of the project is to improve safety at this location on US 41 by reducing the number of potential traffic conflict points. Other goals and objectives of this project include minimizing the project's overall environmental effect to natural resources and the general community.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Gibson

Municipality: N/A

Limits of Proposed Work: Approximately 2 miles south of SR 64 to approximately 2.41 miles south of SR 64

Total Work Length: 0.41 Mile(s)

Total Work Area: 5.20 Acre(s)

Is an Interstate Access Document (IAD)¹ required?

If yes, when did the FHWA provide a Determination of Engineering and Operational Acceptability?

Yes ¹	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: <input style="width: 100%;" type="text"/>	

¹If an IAD is required; a copy of the approved CE/EA document must be submitted to the FHWA with a request for final approval of the IAD.

Describe location of project including township, range, city, county, roads, etc. Existing conditions should include current conditions, current deficiencies, roadway description, surrounding features, etc. Preferred alternative should include the scope of work, anticipated impacts, and how the project will meet the Purpose and Need. Logical termini and independent utility also need discussed.

INDOT and the Federal Highway Administration (FHWA) intend to proceed with an intersection improvement project at US 41 and CR 100 W, approximately 2 mile south of SR 64 to approximately 2.41 mile south of SR 64 in Gibson County, Indiana. More specifically, the project is located in a rural portion of Gibson County in Section 24, Township 2 South, Range 11 West in Patoka Township, as shown on the United States Geological Survey (USGS) 7.5 Minute Princeton, Indiana Quadrangle Map (Appendix B, page 2).

The existing intersection at US 41 and CR 100 W is a signalized intersection. US 41 is classified as an urban Principal Arterial Road. The northbound and southbound approaches to the intersection have a dedicated right and left-turn lanes and two through lanes. Northbound and southbound traffic are separated via a 42-foot grassed median. The posted speed limit on US 41 is 60 miles per hour (mph).

North of US 41, CR 100 W is classified as a major collector. South of US 41, CR 100 W is classified as a local road. CR 100 W. is served with a single phase traffic signal. CR 100 W has two 11-foot travel lanes and two 1-foot paved shoulders. Left turns from US 41 are protected. Land use within the project area is primarily agricultural, commercial,

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and residential (Appendix B, page 3).

The preferred alternative will reconfigure the intersection of US 41 with CR 100 W by constructing a Reduced Conflict Intersection (RCI) (Appendix B, pages 10-23). Northbound and Southbound through traffic on CR 100 W will be directed to make a right onto US 41, then make a U-Turn across the US 41 median before making a right turn back onto CR 100 W. A raised concrete curb median will be installed to deter north-south traffic from crossing the existing intersection, while allowing for left turns from US 41. The CR 100 W approaches to the intersection with US 41 will be reconstructed and realigned to accommodate the RCI intersection (Appendix B, pages 10-23).

Construction activities will include the following:

- Removal of existing pavement at areas where median U-turns, raised concrete curb medians, and new turn lanes will be constructed.
- Construction of median U-turns with 4-foot wide inside shoulders within the US 41 median. Median U-turns will be constructed approximately 905 feet east and 1,180 feet west of the existing US 41 and CR 100 W intersection.
- Construction of raised concrete curb medians along US 41.
- Reconstruction of the existing US 41 inside pavement edges to accommodate the left-turn lane.
- Realignment CR 100 W to accommodate the new intersection.
- Realignment of S. 100 W. to accommodate the realigned CR 100 W.
- Installation of new roadway signage, detention, pavement markings, and lighting throughout the project area.

The Maintenance of Traffic (MOT) plan for this project will be accomplished in four phases. The intersection will remain open to traffic with some restrictions (Appendix B, pages 14-20). Additional MOT information is located in the Maintenance of Traffic section of this document.

The preferred alternative of reconfiguring this intersection into a RCI meets the purpose and need of the project because it will eliminate through traffic on and left turning movements from CR 100 W, which will improve safety. Eliminating through traffic and left turning movements will improve safety because it reduces the number of crossing conflict points. A conflict point is a location approaching or within an intersection where vehicle paths can either merge, diverge, or cross, which creates opportunities for crash incidents. Crossing conflict points occur when vehicles travelling along opposing movement paths can intersect, such as when a vehicle travelling from east to west crosses in front of a vehicle travelling north. In its current configuration, there are 24 potential crossing conflict points at the intersection. Constructing a partial RCI will reduce the number of crossing conflict points from 24 to 4. Every effort to avoid, minimize, and/or mitigate project impacts will be made.

The project termini are considered logical because they are rational end points for an intersection improvement project and are of sufficient length to address environmental matters of a broad scale. This project has independent utility because it is a stand-alone project that will improve safety at this intersection, even if no other projects are completed. Design plans can be found in Appendix B, pages 10-23.

OTHER ALTERNATIVES CONSIDERED:

Provide a header for each alternative. Describe all discarded alternatives, including the No Build Alternative. Explain why each discarded alternative was not selected. Make sure to state how each alternative meets or does not meet the Purpose and Need and why.

Green-T Intersection

A Green-T intersection was evaluated at the intersection of US 41 and CR 100 W due to the low traffic volumes on the west approach of CR 100 W. The Green-T concept was modified to allow right-in-right-out access for the west approach. Traffic on US 41 southbound would be free-flow and US 41 northbound would be signalized to allow for westbound left turns. The signal controlling the US 41 northbound approach would be less effective at reducing

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northbound rear-end crashes than the RCI; therefore, this alternative was eliminated.

No Build Alternative

The no build alternative proposes continued use of the intersection in the current condition. If selected, this alternative would result in continued occurrences of rear-end and right-angle crashes. This alternative would not meet the purpose and need of the project and was therefore eliminated from further consideration.

The No Build Alternative is not feasible, prudent or practicable because (Mark all that apply):

It would not correct existing capacity deficiencies;

It would not correct existing safety hazards;

It would not correct the existing roadway geometric deficiencies;

It would not correct existing deteriorated conditions and maintenance problems; or

It would result in serious impacts to the motoring public and general welfare of the economy.

Other (Describe):

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

ROADWAY CHARACTER:

If the proposed action includes multiple roadways, complete and duplicate for each roadway.

Name of Roadway	<u>US 41</u>			
Functional Classification:	<u>Principal Arterial</u>			
Current ADT:	<u>16,400</u>	<u>VPD (2023)</u>	Design Year ADT:	<u>18,200</u>
				<u>VPD (2043)</u>
Design Hour Volume (DHV):	<u>1,600</u>	Truck Percentage (%)	<u>9</u>	
Designed Speed (mph):	<u>60</u>	Legal Speed (mph):	<u>60</u>	

	Existing	Proposed
Number of Lanes:	Varies 4-6	Varies 5 - 7
Type of Lanes:	2 through lanes in each direction, varies 0-2 turn lane in each direction	2 through lanes in each direction, varies 0 – 2 turn lanes in each direction
Pavement Width:	Varies 76-92 ft.	Varies 100 - 104 ft.
Shoulder Width:	4-foot inside, 10-foot outside ft.	4-foot inside, 10-foot outside ft.
Median Width:	Varies 30 - 42 ft.	Varies 18 - 30 ft.
Sidewalk Width:	N/A ft.	N/A ft.

Setting:	<input checked="" type="checkbox"/> Urban	<input checked="" type="checkbox"/> Suburban	<input type="checkbox"/> Rural
Topography:	<input checked="" type="checkbox"/> Level	<input type="checkbox"/> Rolling	<input type="checkbox"/> Hilly

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Name of Roadway CR 100 W
 Functional Classification: Major Collector
 Current ADT: 3,300 Design Year ADT: 3,500
 Design Hour Volume (DHV): 420 Truck Percentage (%): 9
 Designed Speed (mph): 40 Legal Speed (mph): 40

	Existing	Proposed
Number of Lanes:	2	2
Type of Lanes:	1 through lanes in each direction	1 through lane in each direction
Pavement Width:	Varies 20-28 ft.	30 ft.
Shoulder Width:	Varies 0-2 ft.	4 feet each side ft.
Median Width:	N/A ft.	N/A ft.
Sidewalk Width:	N/A ft.	N/A ft.

Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

BRIDGES AND/OR SMALL STRUCTURE(S):

If the proposed action includes multiple structures, complete and duplicate for each bridge and/or small structure. Include both existing and proposed bridge(s) and/or small structure(s) in this section.

Structure/NBI Number(s): N/A Sufficiency Rating: N/A
 (Rating, Source of Information)

	Existing	Proposed
Bridge/Structure Type:	N/A	
Number of Spans:	N/A	
Weight Restrictions:	ton	ton
Height Restrictions:	ft.	ft.
Curb to Curb Width:	ft.	ft.
Outside to Outside Width:	ft.	ft.
Shoulder Width:	ft.	ft.

Describe impacts and work involving bridge(s), culvert(s), pipe(s), and small structure(s). Provide details for small structure(s): structure number, type, size (length and dia.), location and impacts to water. Use a table if the number of small structures becomes large. If the table exceeds a complete page, put it in the appendix and summarize the information below with a citation to the table.

There are no INDOT numbered or named structures within the project area. There are several proposed median drainage pipes conveying stormwater and non-jurisdictional streams.

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MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:
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	Yes	No
Is a temporary bridge proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is a temporary roadway proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project involve the use of a detour or require a ramp closure? (describe below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provisions will be made for access by local traffic and so posted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provisions will be made for through-traffic dependent businesses.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provisions will be made to accommodate any local special events or festivals.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the proposed MOT substantially change the environmental consequences of the action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there substantial controversy associated with the proposed method for MOT?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discuss closures and/or facilities (if any) that will be provided for maintenance of traffic. Any known impacts from these temporary measures should be quantified to the extent possible, particularly with respect to properties such as Section 4(f) resources and wetlands. Any local concerns about access and traffic flow should be detailed as well.

The MOT plan will require lane closures and will use phased construction. The intersection will remain open to traffic with some restrictions (Appendix I, pages 14-20). MOT for this project will be coordinated with the MOT plan for a separate bridge replacement project (Des. Nos. 1593063 & 1593064) located south of this intersection along US 41.

The MOT phases are summarized below:

Phase 1: The outside travel lanes will be closed, and one inside travel lane in each direction will remain open. Temporary pavement markings will be placed to direct traffic. All turn lanes will remain open and traffic on CR 100 W will be maintained.

Phase 2: The inside travel lanes will be closed, and one outside travel lane in each direction will remain open.

Phase 3: The inside travel lanes will be closed, and one outside travel lane in each direction will remain open. The median U-turns east and west of the intersection along US 41 will be open to travelers in this phase.

Phase 4: All lanes along US 41 will be open to travelers. The realignment of CR 100 W will be completed during this phase.

The closures/lane restrictions will pose a temporary inconvenience to traveling motorists (including school buses and emergency services); however, no significant delays are anticipated, and all inconveniences and delays will cease upon project completion.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ _____ Right-of-Way: \$ _____ Construction: \$ 11,142,000* (2023)

Anticipated Start Date of Construction: April 1, 2023

*This project is covered in the Fiscal Year (FY) 2020-2024 State Transportation Improvement Project (STIP) under the lead Des. No. for the contract, Des. No. 1593063.

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RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.07	0
Commercial	0.27	0.05
Agricultural	0.64	0
Forest	0	0
Wetlands	0	0
Other:	0	0
Other:	0	0
TOTAL	0.98	0.05

Describe both Permanent and Temporary right-of-way and describe their current use. Typical and Maximum right-of-way widths (existing and proposed) should also be discussed. Any advance acquisition, reacquisition or easements, either known or suspected, and their impacts on the environmental analysis should be discussed.

Existing right-of-way (ROW) along US 41 varies from 25 feet to 46 feet from the edge of pavement along US 41 and consists of mowed and maintained ROW. Along CR 100 W., the existing ROW is located at the edge of pavement (Appendix B, pages 21-23).

The project requires approximately 0.98 acre of permanent ROW along US 41 and CR 100 W. Of this 0.98 acre, approximately 0.07 acre is residential, approximately 0.27 acre is commercial, and approximately 0.64 acre is residential. The project also requires approximately 0.05 acre of temporary ROW from a commercial property north of US 41, along CR 100 W. The temporary ROW acquisition will include only commercial property. Proposed ROW along US 41 varies from approximately 30 feet to 70 feet from the existing pavement. Proposed ROW along CR 100 W. varies from approximately 20 feet to 520 feet from the edge of pavement. Land use of permanent right-of-way will be maintained roadside following construction.

Advance acquisition, reacquisition or easements are not expected for this project.

If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately.

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Part III – Identification and Evaluation of Impacts of the Proposed Action

SECTION A - EARLY COORDINATION:

List the date(s) coordination was sent and all resource agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received.

Early coordination letters were sent on October 16, 2020 (Appendix C, pages 1-3).

Agency	Date Sent	Date Response Received	Appendix
INDOT Environmental Services Division	October 16, 2020	October 19, 2020	Appendix C, page 4
U.S. Fish and Wildlife Service (USFWS)	October 16, 2020	October 26, 2020	Appendix C, pages 5-6
Natural Resources Conservation Services (NRCS)	October 16, 2020	November 12, 2020	Appendix C, pages 7-8
Indiana Department of Natural Resources, Division of Fish and Wildlife (IDNR DFW)	October 16, 2020	November 13, 2020	Appendix C, page 9
Department of Natural Resources, Division of Oil and Gas	October 16, 2020	November 20, 2020	Appendix C, page 10
Indiana Department of Environmental Management	N/A	Response via webform March 16, 2021	Appendix C, pages 11-14
Indiana Geological and Water Survey	N/A	Response via webform March 16, 2021	Appendix C, pages 15-16
United States Army Corps of Engineers	October 16, 2020	No response received	N/A
Federal Highway Administration	October 16, 2020	No response received	N/A
IDNR Division of Reclamation	October 16, 2020	No response received	N/A
INDOT Division of Utilities and Railroad	October 16, 2020	No response received	N/A
Gibson County Soil and Water Conservation District	October 16, 2020	No response received	N/A
Gibson County Surveyor's Office	October 16, 2020	No response received	N/A
Gibson County Sheriff	October 16, 2020	No response received	N/A
Gibson County Highway Department	October 16, 2020	No response received	N/A
City of Princeton Mayor	October 16, 2020	No response received	N/A
Gibson County Council	October 16, 2020	No response received	N/A
North Gibson School Corporation	October 16, 2020	No response received	N/A
Gibson County Emergency Management	October 16, 2020	No response received	N/A
Gibson County Board of Commissioners	October 16, 2020	No response received	N/A
Evansville Metropolitan Planning Organization	October 16, 2020	No response received	N/A

All applicable recommendations are included in the Environmental Commitments section of this CE document.

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SECTION B – ECOLOGICAL RESOURCES:

Streams, Rivers, Watercourses & Other Jurisdictional Features

- Federal Wild and Scenic Rivers
- State Natural, Scenic or Recreational Rivers
- Nationwide Rivers Inventory (NRI) listed
- Outstanding Rivers List for Indiana
- Navigable Waterways

Presence

Impacts

	Yes	No

Total stream(s) in project area: 2,586 Linear feet Total impacted stream(s): 530 Linear feet

Stream Name	Classification	Total Size in Project Area (linear feet)	Impacted linear feet	Comments (i.e. location, flow direction, likely Water of the US, appendix reference)
UNT to Brown Ditch	Riverine, ephemeral (R6)	325	0	UNT to Brown Ditch flows southwest through a corrugated metal pipe culvert beneath US 41. This stream is ephemeral and is not a likely waters of the U.S (Appendix F, page 10).
UNT 1	Riverine, ephemeral (R6)	1625	530	UNT 1 flows southeast at the toe of the roadside slope of US 41 and flows through a small drainage structure beneath CR 100 W, eventually draining into UNT to Brown Ditch. This stream is ephemeral and is not a likely waters of the U.S (Appendix F, page 10).
UNT 2	Riverine, ephemeral (R6)	411	0	UNT 2 flows northwest through a small drainage structure beneath US 41. This stream is ephemeral and is not a likely waters of the U.S (Appendix F, page 10).
UNT 3	Riverine, ephemeral (R6)	225	0	UNT 3 flows northwest at the toe of the roadside slope of US 41 and flows into UNT 2. This stream is ephemeral and is not a likely waters of the U.S (Appendix F, page 10).

Describe all streams, rivers, watercourses and other jurisdictional features adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if the streams or rivers are listed on any federal or state lists for Indiana. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, page 8) there are six streams, rivers, watercourse or other jurisdictional features within the 0.5 mile search radius. That number was confirmed by the site visit on July 13, 2020 by HNTB, and a desktop review of the National Wetlands Inventory (NWI) map (Appendix F, page 11). There are no streams, rivers, watercourses, or other jurisdictional features present within or adjacent to the project area.

A *Waters of the U.S. Determination / Wetland Delineation Report* was approved by INDOT Ecology and Waterway Permitting Office on October 29, 2020. Please refer to Appendix F, pages 1-14 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that there are four likely non-jurisdictional streams within the project area. The USACE makes all final determinations regarding jurisdiction.

UNT to Brown Ditch is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blue-line feature (Appendix B, page 2). UNT to Brown Ditch exhibited 3 feet wide by 6 inches deep ordinary high-water mark (OHWM) during the site investigation. Per the USGS Streamstats Database (<https://water.usgs.gov/osw/streamstats/indiana.html>), accessed on October 19, 2020, the upstream drainage area of UNT to Brown Ditch is 0.055 square mile. UNT to Brown Ditch is not listed as a Federal Wild and Scenic River, a State Natural, Scenic and Recreational River, Indiana Register's listing of Outstanding Rivers and Streams, navigable waterway, or a National Rivers Inventory waterway.

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This stream is classified as ephemeral due to the presence of water being limited to after precipitation events. Groundwater is not a source of water for the stream; runoff from rainfall is the primary source of water for streamflow. As such, ephemeral streams are not considered waters of the U.S. and therefore this stream is likely non-jurisdictional. This stream is located outside of the construction area and the structure conveying UNT to Brown Ditch will remain in place. Therefore, no impacts are expected.

UNT 1 is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Appendix B, page 2). UNT 1 exhibited a 2 feet wide by 6 inches deep OHWM during the site investigation. Per the USGS Streamstats Database (<https://water.usgs.gov/osw/streamstats/indiana.html>), accessed on October 19, 2020, the upstream drainage area of UNT 1 is 0.055 square mile. UNT 1 is not listed as a Federal Wild and Scenic River, a State Natural, Scenic and Recreational River, Indiana Register's listing of Outstanding Rivers and Streams, navigable waterway, or a National Rivers Inventory waterway. This stream is classified as ephemeral due to the presence of water being limited to after precipitation events. Groundwater is not a source of water for the stream; runoff from rainfall is the primary source of water for streamflow. As such, ephemeral streams are not considered waters of the U.S. and therefore this stream is likely non-jurisdictional.

Approximately 485 linear feet of UNT 1 will be permanently impacted by the drainage structure replacement, permanent erosion control, and the realignment of CR 100 W. Temporary cofferdams and pump arounds will be necessary to complete the scope of work, and will temporarily impact approximately 45 feet of UNT 1. Once the work is complete the contractor will remove the temporary cofferdams and pump around. The proposed action includes all practicable measures to minimize harm to the impacted streams. During final design, the appropriate permits will be acquired.

UNT 2 is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Appendix B, page 2). UNT 2 exhibited 1.4 feet wide by 5 inches deep OHWM during the site investigation. Per the USGS Streamstats Database (<https://water.usgs.gov/osw/streamstats/indiana.html>), accessed on October 19, 2020, the upstream drainage area of UNT 2 is 0.055 square mile. UNT 2 is not listed as a Federal Wild and Scenic River, a State Natural, Scenic and Recreational River, Indiana Register's listing of Outstanding Rivers and Streams, navigable waterway, or a National Rivers Inventory waterway. This stream is classified as ephemeral due to the presence of water being limited to after precipitation events. Groundwater is not a source of water for the stream; runoff from rainfall is the primary source of water for streamflow. As such, ephemeral streams are not considered waters of the U.S. and therefore this stream is likely non-jurisdictional. This stream is located outside of the construction limits. Therefore, no impacts are expected.

UNT 3 is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Appendix B, page 2). UNT 3 exhibited 1 feet wide by 4 inches deep OHWM during the site investigation. Per the USGS Streamstats Database (<https://water.usgs.gov/osw/streamstats/indiana.html>), accessed on October 19, 2020, the upstream drainage area of UNT 3 is 0.055 square mile. UNT 3 is not listed as a Federal Wild and Scenic River, a State Natural, Scenic and Recreational River, Indiana Register's listing of Outstanding Rivers and Streams, navigable waterway, or a National Rivers Inventory waterway. This stream is classified as ephemeral due to the presence of water being limited to after precipitation events. Groundwater is not a source of water for the stream; runoff from rainfall is the primary source of water for streamflow. As such, ephemeral streams are not considered waters of the U.S. and therefore this stream is likely non-jurisdictional. This stream is located outside of the construction limits. Therefore, no impacts are expected.

USFWS responded on October 26, 2020 with recommendations pertaining to erosion and sediment control measures, bank stabilization, minimization of in-stream channel work, and evaluation of wildlife crossings (Appendix C, pages 5-6).

IDNR-DFW responded on November 13, 2020 with recommendations pertaining to erosion and sediment control measures, and bank stabilization (Appendix C, page 9).

An automated letter was generated from the Indiana Department of Environmental Management's (IDEM) website on March 16, 2021 recommending appropriate storm water quality measures to be implemented during construction and after project completion (Appendix C, pages 11-14).

All applicable recommendations are included in the Environmental Commitments section of this CE document.

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Open Water Feature(s)

- Reservoirs
- Lakes
- Farm Ponds
- Retention/Detention Basin
- Storm Water Management Facilities
- Other: _____

Presence

X

Impacts

Yes	No
	X

Describe all open water feature(s) identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, page 8) there are five open water features within the 0.5 mile search radius. That number was updated to nine by the site visit on July 13, 2020 by HNTB and a desktop review of the NWI map (Appendix F, page 11). Two open water features are present within or adjacent to the project area.

Two retention ponds used by a commercial property are located adjacent to the project area. The ponds are located outside of the area necessary to complete the project. Therefore, no impacts are expected.

A *Waters of the U.S. Determination / Wetland Delineation Report* was approved by INDOT Ecology and Waterway Permitting Office on October 29, 2020. Please refer to Appendix F, pages 1-14 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that there are no open waters within the project area. The USACE makes all final determinations regarding jurisdiction.

Wetlands

Presence

X

Impacts

Yes	No
	X

Total wetland area: 0.038 Acre(s) Total wetland area impacted: 0 Acre(s)

(If a determination has not been made for non-isolated/isolated wetlands, fill in the total wetland area impacted above.)

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments (i.e. location, likely Water of the US, appendix reference)
Wetland A	PEM	0.038	0	Wetland A is located in the roadside ditch east of US 41. This wetland is considered isolated and is not a likely waters of a U.S. (Appendix F, page 10).

Wetlands (Mark all that apply)

- Wetland Determination
- Wetland Delineation
- USACE Isolated Waters Determination

Documentation

X

ESD Approval Dates

October 29, 2020

Improvements that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):

- Substantial adverse impacts to adjacent homes, business or other improved properties;
- Substantially increased project costs;
- Unique engineering, traffic, maintenance, or safety problems;
- Substantial adverse social, economic, or environmental impacts, or

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The project not meeting the identified needs.

Describe all wetlands identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, page 8) there are 17 wetlands within the 0.5 mile search radius. That number was confirmed by the site visit on July 13, 2020 by HNTB, and a desktop review of the NWI map (Appendix F, page 11). There is one wetland present within or adjacent to the project area.

A *Waters of the U.S. Determination / Wetland Delineation Report* was approved by INDOT Ecology and Waterway Permitting Office on October 29, 2020. Please refer to Appendix F, pages 1-14 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that there is one likely non-jurisdictional wetland within the project area. The USACE makes all final determinations regarding jurisdiction.

Wetland A is located in the roadside ditch east of US 41. This wetland is located north of where the intersection improvement activities will occur. Therefore, no impact is expected.

An automated letter was generated from IDEM's website on March 16, 2021 (Appendix C, pages 11-14). The letter contains recommendations pertaining to obtaining proper agency permits.

All applicable recommendations are included in the Environmental Commitments section of this CE document.

Terrestrial Habitat	<u>Presence</u>	<u>Impacts</u>	
	<input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Total terrestrial habitat in project area: 7.2 Acre(s) Total tree clearing: 0 Acre(s)

Describe types of terrestrial habitat (i.e. forested, grassland, farmland, lawn, etc.) adjacent or within the project area. Include whether or not impacts will occur to habitat identified. Include total terrestrial habitat impacted and total tree clearing that will occur. Discuss measure to avoid, minimize, and mitigate if impacts will occur.

Based on a desktop review, a site visit on July 13, 2020 by HNTB and the aerial map of the project area (Appendix B, page 3) there is maintained roadside habitat, agricultural, and roadside ditch habitat. Dominant vegetation within the project area consists of lesser poverty rush (*Juncus tenuis*), yellow nut sedge (*Cyperus esculentus*), tall fescue (*Schedonorus arundinacea*), Kentucky blue grass (*Poa pratensis*), Japanese honeysuckle (*Lonicera japonica*).

Approximately 3.6 acres of disturbance will occur to terrestrial habitat. No tree removal will be necessary for this project; however, brush removal will be necessary. Due to the scope of the RCI construction, the extension of turn lanes, the construction of median U-turns and slotted left turn lanes, and the realignment of CR 100 W, avoidance alternatives are not practical. Terrestrial habitat removal will not require mitigation.

USFWS responded on October 26, 2020 with recommendations pertaining to erosion and sediment control measures, tree and understory vegetation clearing, and evaluation of wildlife crossings (Appendix C, pages 5-6).

IDNR-DFW responded on November 13, 2020 with recommendations pertaining to post-construction revegetation measures including riparian habitat mitigation and erosion and sediment control measures (Appendix C, page 9).

An automated letter was generated from the IDEM website on March 16, 2021 recommending appropriate storm water quality measures to be implemented during construction and after project completion (Appendix C, pages 11-14).

All applicable recommendations are included in the Environmental Commitments section of this CE document.

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Protected Species

Federally Listed Bats

Information for Planning and Consultation (IPaC) determination key completed

Section 7 informal consultation completed (IPaC cannot be completed)

Section 7 formal consultation Biological Assessment (BA) required

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Determination Received for Listed Bats from USFWS: NE NLAA LAA

Other Species not included in IPaC

Additional federal species found in project area (based on IPaC species list)

State species (not bird) found in project area (based upon consultation with IDNR)

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Migratory Birds

Known usage or presence of birds (i.e. nests)

State bird species based upon coordination with IDNR

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discuss IDNR coordination and species identified. Describe USFWS Section 7 consultation and determination received for Indiana bat and northern long-eared bat impacts. Discuss if other federally listed species were identified. If so, include consultation that has occurred and the determination that was received. Discuss if migratory birds have been observed and any impacts.

Based on a desktop review and the RFI report (Appendix E, pages 1-14), completed by HNTB on November 13, 2020, the IDNR Gibson County Endangered, Threatened and Rare (ETR) Species List has been checked. According to the IDNR-DFW early coordination response letter dated November 13, 2020 (Appendix C, page 9), the Natural Heritage Program's Database has been checked and no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity. IDNR-DFW provided recommendations to erosion and sediment control methods that minimize the entrapment and snaring of small bodied wildlife.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, pages 17-22). The project is within range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*). No additional species were generated in the IPaC species list other than the Indiana bat and northern long-eared bat.

The project qualifies for the *Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB)*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on October 6, 2020, and based on the responses provided, the project was found to "may affect – not likely to adversely affect" the Indiana bat and/or the NLEB (Appendix C, pages 24-33). INDOT reviewed and verified the effect finding on October 8, 2020 and requested USFWS's review of the finding. No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. The USFWS provided Avoidance and Minimization Measures (AMMs) pertaining to temporary and permanent lighting, and operator, employee, and contractor awareness of environmental commitments and AMMs while working in bat habitat area. AMMs and/or commitments are included as firm commitments in the *Environmental Commitments* section of this document.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act, as amended. If new information on endangered species at the site becomes available, or if project plans are changed, USFWS will be contacted for consultation.

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Geological and Mineral Resources

- Project located within the Potential Karst Features Area of Indiana
- Karst features identified within or adjacent to the project area
- Oil/gas or exploration/abandoned wells identified in the project area

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Date Karst Study/Report reviewed by INDOT EWPO (if applicable): _____

Discuss if project is located in Potential Karst Features Area of Indiana and if any karst features have been identified in the project area (from RFI). Discuss response received from IGWS coordination. Discuss if any mines, oil/gas, or exploration/abandoned wells were identified and if impacts will occur. Describe if any impacts will occur to any karst features. Include discussion of karst study/report was completed and results. (Karst investigation must comply with the current Karst MOU and coordinated and reviewed by INDOT EWPO)

Based on a desktop review, the project is located outside the designated karst region of Indiana as outlined in the October 13, 1993 Karst Memorandum of Understanding (MOU). According to the topo map of the project area (Appendix B, page 2) and the RFI report (Appendix E, page 8), there are no karst features identified within or adjacent to the project area. In the early coordination response dated March 17, 2021 the Indiana Geological and Water Survey (IGWS) did not indicate that karst features exist in the project area (Appendix C, pages 15-16). IGWS also stated that there is potential mine subsidence, high liquefaction potential, low potential for bedrock resources, low potential for sand and gravel resources, and there are active or abandoned petroleum exploration wells, and active or abandoned underground coal mines located within the project area. According the IDNR Division of Oil and gas early coordination response on November 20, 2020, the features will not be affected because the only well present in the project area has been properly plugged and abandoned (Appendix C, page 10). Response from IGWS has been communicated with the designer on April 23, 2021. No impacts are expected.

SECTION C – OTHER RESOURCES

Drinking Water Resources

- Wellhead Protection Area(s)
- Source Water Protection Area(s)
- Water Well(s)
- Urbanized Area Boundary
- Public Water System(s)

	Impacts	
	Yes	No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Is the project located in the St. Joseph Sole Source Aquifer (SSA):

If Yes, is the FHWA/EPA SSA MOU Applicable?

If Yes, is a Groundwater Assessment Required?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Check the appropriate boxes and discuss each topic below. Provide details about impacts and summarize resource-specific coordination responses and any mitigation commitments. Reference responses in the Appendix.

The project is located in Gibson County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the FHWA/EPA Sole Source Aquifer MOU is not applicable to this project, a detailed groundwater assessment is not needed, and no impacts are expected.

The Indiana Department of Environmental Management's Wellhead Proximity Determinator website (<http://www.in.gov/idem/cleanwater/pages/wellhead/>) was accessed on October 7, 2020 by HNTB. This project is not located within a Wellhead Protection Area or Source Water Area. No impacts are expected.

The Indiana Department of Natural Resources Water Well Record Database website (<https://www.in.gov/dnr/water/3595.htm>) was accessed on March 17, 2021 by HNTB. There is one unspecified well type

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mapped within the project area. The features will not be affected because the well is located outside of the construction limits. Therefore, no impacts are expected. Should it be determined during the right-of-way phase that this well will be affected, a cost to cure will likely be included in the appraisal to restore the wells.

Based on a desktop review of the Urbanized Area Boundary GIS Layer by HNTB on November 13, 2020 this project is located in an Urban Area Boundary (UAB) however no coordination is needed because a Rule 13 Permit from IDEM has not been issued.

Based on a desktop review, a site visit on July 13, 2020 by HNTB and the aerial map of the project area (Appendix B, page 3) this project is located where there is a public water system. The public water system will be affected by relocating a 12-inch water line, which crosses US 41 approximately 80 feet west of the intersection. The water line will remain in approximately the same location but will be relocated at a different depth. An Initial Notice Letter was sent to City of Princeton Water on October 12, 2020 (Appendix I, page 17). On November 12, 2020, City of Princeton Water responded with a letter describing approximate locations of their facilities within the project area, and a facility map within the project area (Appendix I, page 18).

Floodplains	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Project located within a regulated floodplain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Longitudinal encroachment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transverse encroachment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Homes located in floodplain within 1000' up/downstream from project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If applicable, indicate the Floodplain Level?

Level 1 Level 2 Level 3 Level 4 Level 5

Use the IDNR Floodway Information Portal to help determine potential impacts. Include floodplain map in appendix. Discuss impacts according to the classification system. If encroachment on a flood plain will occur, coordinate with the Local Flood Plain Administrator during design to insure consistency with the local flood plain planning.

The Indiana Department of Natural Resources Indiana Floodway Information Portal website (<http://dnrmapping.dnr.in.gov/appsphp/fdms/>) was accessed on March 17, 2021 by HNTB. This project is not located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page 14). Therefore, it does not fall within the guidelines for the implementation of 23 CFR 650, 23 CFR 771, and 44 CFR. No impacts are expected.

Farmland	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Agricultural Lands	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Prime Farmland (per NRCS)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Total Points (from Section VII of CPA-106/AD-1006*) 131

**If 160 or greater, see CE Manual for guidance.*

Discuss existing farmland resources in the project area, impacts that will occur to farmland, and mitigation and minimization measures considered.

Based on a desktop review, a site visit on July 13, 2020 by HNTB and the aerial map of the project area (Appendix B, page 3), the project will convert 0.66 acres of farmland as defined by the Farmland Protection Policy Act. An early coordination letter was sent on October 29, 2020, to Natural Resources Conservation Services (NRCS). Coordination with NRCS resulted in a score of 131 on the (NRCS-CPA-106/AD 1006 Form) (Appendix C, pages 7-8). NRCS's threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this

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project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project. Farmland acreages provided by the NRCS were calculated based on a preliminary ROW footprint, a more refined ROW footprint was used in the ROW section of this document. No alternatives other than those previously discussed in this document will be investigated without reevaluating impacts to prime farmland.

SECTION D – CULTURAL RESOURCES

Minor Projects PA **Category(ies) and Type(s)** **INDOT Approval Date(s)** **N/A**

Full 106 Effect Finding
 No Historic Properties Affected No Adverse Effect Adverse Effect

Eligible and/or Listed Resources Present
 NRHP Building/Site/District(s) Archaeology NRHP Bridge(s)

Documentation Prepared (mark all that apply)	ESD Approval Date(s)	SHPO Approval Date(s)
APE, Eligibility and Effect Determination		
800.11 Documentation		
Historic Properties Report or Short Report		
Archaeological Records Check and Assessment	October 20, 2020	
Archaeological Phase Ia Survey Report		
Archaeological Phase Ic Survey Report		
Other:		

Memorandum of Agreement (MOA) **MOA Signature Dates** (List all signatories)

If the project falls under the MPPA, describe the category(ies) that the project falls under and any approval dates. If the project requires full Section 106, use the headings provided. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of the paper(s) and the comment period deadline. Include any further Section 106 work which must be completed at a later date, such as mitigation from a MOA or avoidance commitments.

On October 20, 2020, the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Category B, Type B-2 and Type B-3 under the Minor Projects Programmatic Agreement (Appendix D, pages 1-3).

Category B Type 2 projects include the installation of new lighting, signals, signage and other traffic control devices when work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT CRO determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area and work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

Category B Type 3 project include the construction of added travel, turning, or auxiliary lanes (e.g., bicycle, truck climbing, acceleration and deceleration lanes) and shoulder widening when work occurs in undisturbed soils and an archaeological investigated conducted by the applicant and revied by INDOT CRO determines that no National

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Register-listed or potentially National Register-eligible archaeological resources within the project area. and work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

An INDOT, CRO archaeologist, who met the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 completed an archaeological records check and Phase Ia reconnaissance for the proposed project area. The records check found that there have been eight archaeological reconnaissance all completed, at least partially, within one mile of the project area. No archaeological sites were recorded for these projects. One archaeological site has been recorded within one mile of the project area, 12-Gi-584. This Archaic site was recorded for a database enhancement project based on information provided by a local archaeological enthusiast.

The archaeological field reconnaissance examined the project area through approximately 74 shovel test probes of the undisturbed areas. Soils in the agricultural fields were found to be deflated. No cultural materials were located and no additional archaeological investigation is recommended.

No further consultation is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

SECTION E – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES

	<u>Presence</u>	<u>Use</u>	
		Yes	No
Parks and Other Recreational Land			
Publicly owned park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publicly owned recreation area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (school, state/national forest, bikeway, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife and Waterfowl Refuges			
National Wildlife Refuge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
National Natural Landmark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Wildlife Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Nature Preserve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historic Properties			
Site eligible and/or listed on the NRHP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Evaluations Prepared</u>			
Programmatic Section 4(f)	<input type="checkbox"/>		
"De minimis" Impact	<input type="checkbox"/>		
Individual Section 4(f)	<input type="checkbox"/>		
Any exception included in 23 CFR 774.13	<input type="checkbox"/>		

Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the discussion below. Individual Section 4(f) documentation must be included in the appendix and summarized below. Discuss proposed alternatives that satisfy the requirements of Section 4(f). FHWA has identified various exceptions to the requirement for Section 4(f) approval. Refer to 23 CFR § 774.13 - Exceptions.

Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife / waterfowl refuges, and NRHP eligible or listed historic properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E,

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page 2) there are no potential 4(f) resources located within the 0.5 mile search radius. According to additional research, using Google Earth, and by the site visit on July 13, 2020 by HNTB, there are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.

Section 6(f) Involvement

Presence

Use

Section 6(f) Property

Yes

No

Discuss Section 6(f) resources present or not present. Discuss if any conversion would occur as a result of this project. If conversion will occur, discuss the conversion approval.

The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreation resources. Section 6(f) of this Act prohibits conversion of lands purchased with LWCF monies to a non-recreation use.

A review of 6(f) properties on the INDOT ESD website revealed a total of four properties in Gibson County (Appendix I, page 19). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources.

SECTION F – Air Quality

STIP/TIP and Conformity Status of the Project

Is the project in the most current STIP/TIP?

Yes

No

Is the project located in an MPO Area?

Is the project in an air quality non-attainment or maintenance area?

If Yes, then:

Is the project in the most current MPO TIP?

Is the project exempt from conformity?

If No, then:

Is the project in the Transportation Plan (TP)?

Is a hot spot analysis required (CO/PM)?

Location in STIP:

FY 2020-2024

Name of MPO (if applicable):

Location in TIP (if applicable):

Level of MSAT Analysis required?

Level 1a

Level 1b

Level 2

Level 3

Level 4

Level 5

Describe if the project is listed in the STIP and if it is in a TIP. Describe the attainment status of the county(ies) where the project is located. Indicate whether the project is exempt from a conformity determination. If the project is not exempt, include information about the TP and TIP. Describe if a hot spot analysis is required and the MSAT Level.

The FY 2020-2024 STIP is listed based on the lead DES number in the contract. The lead DES number for this contract is 1593063. The FY 2020-2024 STIP includes DES number 1800223 by reference with the contract number B-41404 (Appendix H, page 1).

This project is located in Gibson County, which is currently in attainment for all criteria pollutants according to IDEM's Current and Historical List of Nonattainment Areas by County (https://www.in.gov/idem/airquality/files/nonattainment_county_list.pdf). Therefore, the conformity procedures of 40

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CFR Part 93 do not apply.

This project is of a type qualifying as a categorical exclusion (Group 1) under 23 CFR 771.117(c), or exempt under the Clean Air Act conformity rule under 40 CFR 93.126, and as such, a Mobile Source Air Toxics analysis is not required.

SECTION G - NOISE

Noise

Yes

No

Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?

Date Noise Analysis was approved/technically sufficient by INDOT ESD: _____

Describe if the project is a Type I or Type III project. If it is a Type I project, describe the studies completed to date and if noise impacts were identified. If noise impacts were identified, describe if abatement is feasible and reasonable and include a statement of likelihood.

This project is a Type III project. In accordance with 23 CFR 772 and the current *Indiana Department of Transportation Traffic Noise Analysis Procedure*, this action does not require a formal noise analysis.

SECTION H – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors

Will the proposed action comply with the local/regional development patterns for the area?

Yes

No

Will the proposed action result in substantial impacts to community cohesion?

Will the proposed action result in substantial impacts to local tax base or property values?

Will construction activities impact community events (festivals, fairs, etc.)?

Does the community have an approved transition plan?

If No, are steps being made to advance the community's transition plan?

Does the project comply with the transition plan? (explain in the discussion below)

Discuss how the project complies with the area's local/regional development patterns; whether the project will impact community cohesion; and impact community events. Discuss how the project conforms with the ADA Transition Plan.

The project is in a rural portion of Gibson County, Indiana and will require the acquisition of 0.98 acres of permanent right-of-way and 0.05 acre of temporary right-of-way. The right-of-way acquisition is not anticipated to have a significant impact on tax base or property values.

The MOT plan will use phased construction. The intersection will remain open to traffic with some restrictions. Community and economic impacts realized due to the project will include increased travel time and increased emergency response time. Impacts will be temporary in nature. Local access to properties surrounding the construction limits will be maintained during the roadway closure per INDOT Standard Specification 107.08(e).

Per the *2021 Indiana Festival Guide* (<https://indianafestivals.org/festival-search/?keyword=&county%5B%5D=Gibson>) accessed on March 17, 2021, there are seven scheduled festivals in Gibson County. Four festivals are located in Princeton, Indiana, which is located off of the SR 64 exit, approximately 2.25 north of the project area. The MOT plan may cause minor delays or inconveniences to those traveling to the Lyles Station Corn Maze, Golden heritage Days Festival, Labor Day Celebration, and Gibson County Fair Harvest Homecoming Festival from southern portions of Gibson County. The selected contractor will implement the MOT in accordance with the current IDM and INDOT Standard Specifications.

Gibson County has an approved Americans with Disabilities Act (ADA) Transition Plan. However, the project is within a rural portion of Gibson County and is not included in the ADA Transition Plan. There are no sidewalks within the project

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area.

Public Facilities and Services

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, page 2) there is one public facilities within the 0.5 mile search radius. That number was confirmed by the site visit on July 13, 2020 by HNTB, and a desktop review of facilities within 0.5 mile of the project area on Google Earth. There are no public facilities within or adjacent to the project area, therefore, no impacts are expected. Access to all properties will be maintained during construction.

It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access.

Environmental Justice (EJ) (Presidential EO 12898)

During the development of the project were EJ issues identified?

Yes	No
	X
X	

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

	X
	X

Will the project result in adversely high and disproportionate impacts to EJ populations?

Indicate if EJ issues were identified during project development. If an EJ analysis was not required, discuss why. If an EJ analysis was required, describe how the EJ population was identified. Include if the project has a disproportionately high and adverse effect on EJ populations and explain your reasoning. If yes, describe actions to avoid, minimize and mitigate these effects.

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent ROW. The project will require 0.98 acre of permanent ROW. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC is Gibson County, Indiana. The community that overlaps the project area is called the affected community (AC). In this project, the AC is Census Tract 504.02. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2014-2018 American Community Survey was obtained from the US Census Bureau Website (<https://data.census.gov/cedsci/>) on March 17, 2021 by HNTB. The data collected for minority and low-income populations within the AC are summarized in the below table.

Table: Minority and Low-Income Data, American Community Survey 5-Year Estimates, 2018		
	COC – Gibson County	AC – Census Tract 504.02
Percent Minority	6%	4%
125 Percent COC	7%	AC < 125% COC
EJ Population of Concern		No
Percent Low-Income	10%	7%
125 Percent	12%	AC < 125% COC
EJ Population of Concern		No

AC, Census Tract 504.02, has a percent minority of 4% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain minority populations of EJ concern.

Indiana Department of Transportation

County Gibson

Route US 41

Des. No. 1800223

Relocation of People, Businesses or Farms

Will the proposed action result in the relocation of people, businesses or farms?
Is a BIS or CSRS required?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Number of relocations: Residences: _____ Businesses: _____ Farms: _____ Other: _____

Discuss any relocations that will occur due to the project. If a BIS or CSRS is required, discuss the results in the discussion below.

No relocations of people, businesses, or farms will take place as a result of this project.

SECTION I – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Hazardous Materials & Regulated Substances (Mark all that apply)

- Red Flag Investigation (RFI)
- Phase I Environmental Site Assessment (Phase I ESA)
- Phase II Environmental Site Assessment (Phase II ESA)
- Design/Specifications for Remediation required?

Documentation

X

Date RFI concurrence by INDOT SAM (if applicable): December 21, 2020

Include a summary of the potential hazardous material concerns found during review. Discuss in depth sites found within, directly adjacent to, or ones that could impact the project area. Refer to current INDOT SAM guidance. If additional documentation (special provisions, pay quantities, etc.) will be needed, include in discussion. Include applicable commitments.

Based on a review of GIS and available public records, a RFI was concurred with by INDOT SAM on December 21, 2020 by HNTB (Appendix E, pages 1-14). Two National Pollutant Discharge Elimination Systems are located within 0.5 mile of the project area. None of the hazmat sites identified will impact the project. Further investigation for hazardous material concerns is not required at this time.

Indiana Department of Transportation

County Gibson

Route US 41

Des. No. 1800223

ENVIRONMENTAL COMMITMENTS

List all commitments and include the name of agency/organization requesting/requiring the commitment(s). Listed commitments should be numbered.

Firm:

1. If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. (INDOT ESD and INDOT District)
2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. General AMM 1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
4. Lighting AMM 1: Direct temporary lighting away from suitable habitat during the active season (April 1 to September 30). (USFWS)
5. Lighting AMM 2: When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable. (USFWS)

For Further Consideration:

1. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When open-bottom culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community. (USFWS)
2. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)

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US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix A: INDOT Supporting Documentation

Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 ¹
Section 106	Falls within guidelines of Minor Projects PA	“No Historic Properties Affected”	“No Adverse Effect”	-	“Adverse Effect” Or Historic Bridge involvement ²
Stream Impacts³	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	USACE Individual 404 Permit ⁴
Wetland Impacts³	No adverse impacts to wetlands	< 0.1 acre	-	< 1.0 acre	≥ 1.0 acre
Right-of-way⁵	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)*	“No Effect”, “Not likely to Adversely Affect” (With select AMMs ⁶)	“Not likely to Adversely Affect” (With any AMMs or commitments)	-	“Likely to Adversely Affect”	Project does not fall under Species Specific Programmatic ⁷
Threatened/Endangered Species (Any other species)*	Falls within guidelines of USFWS 2013 Interim Policy or “No Effect”	“Not likely to Adversely Affect”	-	-	“Likely to Adversely Affect”
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential ⁸
Sole Source Aquifer	No Detailed Groundwater Assessment	-	-	-	Detailed Groundwater Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Section 4(f) Impacts	None	-	-	-	Any ⁹
Section 6(f) Impacts	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes ¹⁰
Approval Level <ul style="list-style-type: none"> • District Env. (DE) • Env. Serv. Div. (ESD) • FHWA 	Concurrence by DE or ESD	DE or ESD	DE or ESD	DE and/or ESD	DE and/or ESD; and FHWA

¹ Coordinate with INDOT Environmental Services Division. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.

² Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.

³ Total permanent impacts to streams (linear feet) and wetlands (acres).

⁴ US Army Corps of Engineers Individual 404 Permit

⁵ Total permanent and temporary right-of-way. This does not include reacquisition of existing apparent right-of-way.

⁶ Avoidance and Mitigation Measures (AMMs) determined by the IPAC determination key to be required that are not tree AMMs, bridge AMMs, or structure AMMs.

⁷ Projects that do not fall under a Species Specific Programmatic and results in a “Likely to Adversely Affect”. Other findings can be processed as a lower level CE.

⁸ Potential for causing a disproportionately high and adverse impact.

⁹ Section 4(f) use resulting in an Individual, Programmatic, or *de minimis* evaluation. The only exception is a *de minimis* evaluation for historic properties (Effective January 2, 2020). If a historic property *de minimis* and no other use, mark the *None* column.

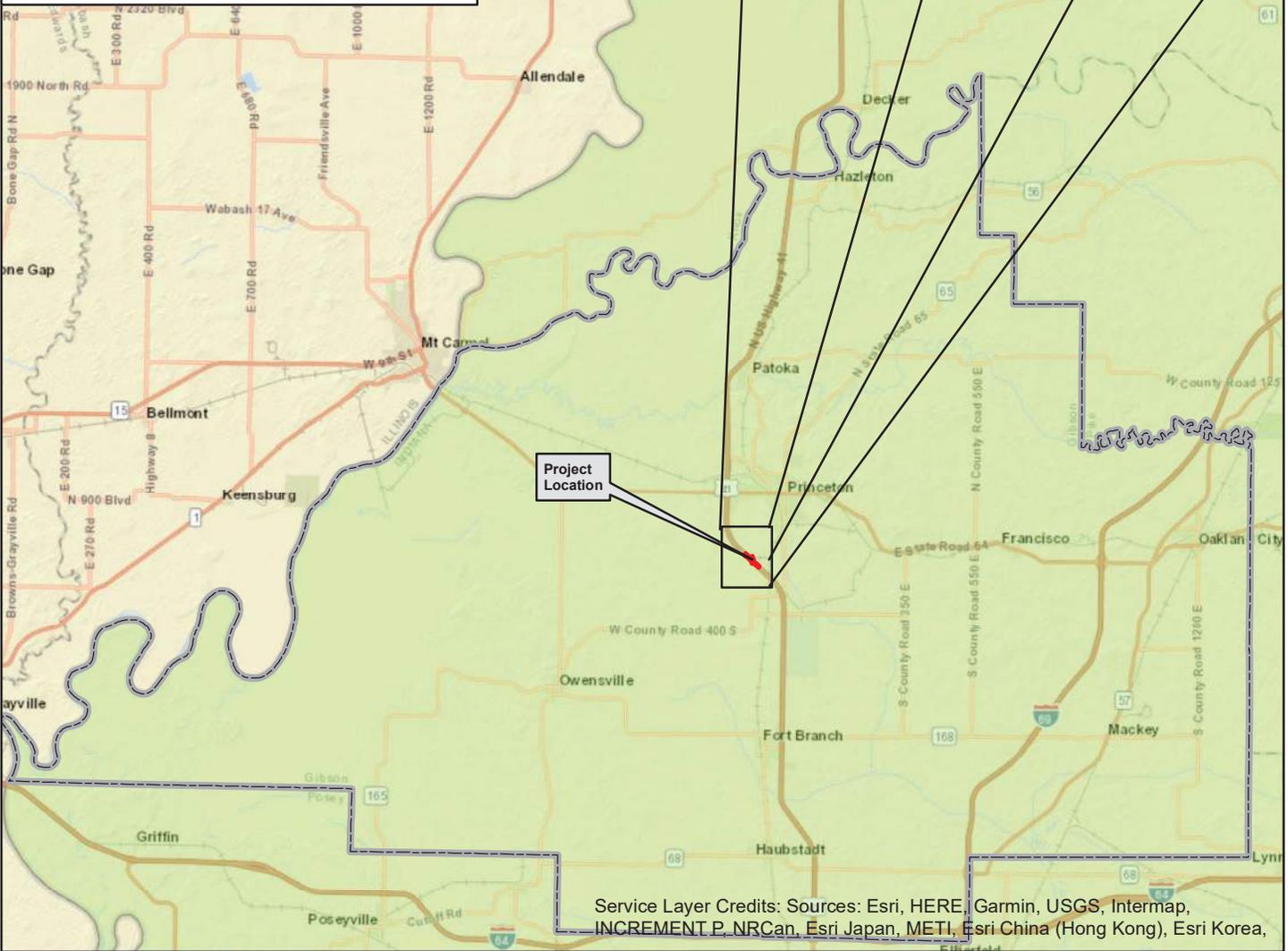
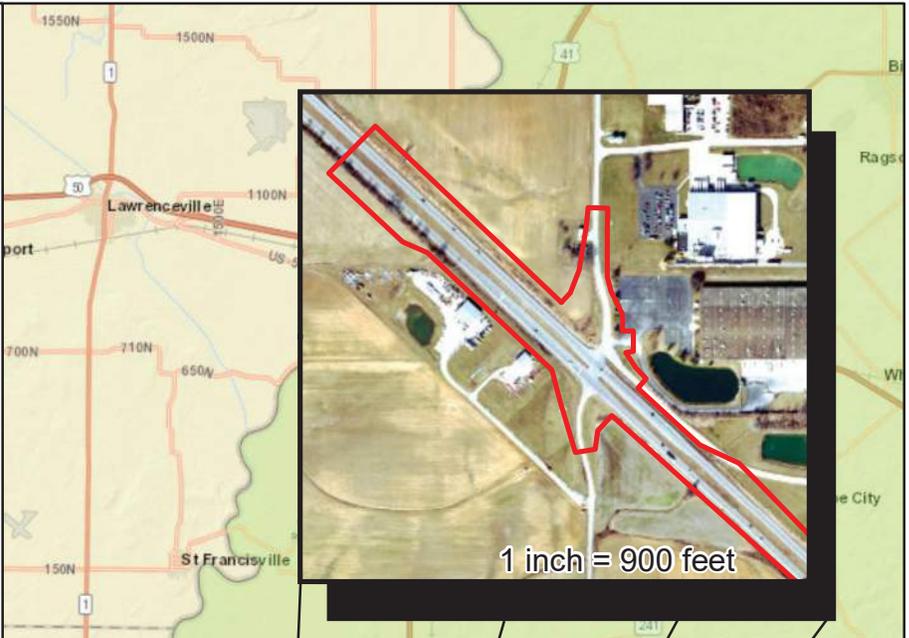
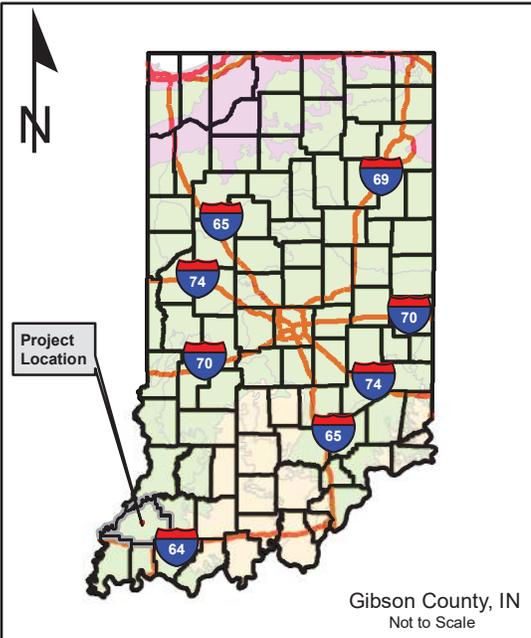
¹⁰ Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

* Includes the threatened/endangered species critical habitat

Note: Substantial public or agency controversy may require a higher-level NEPA document.

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix B: Graphics

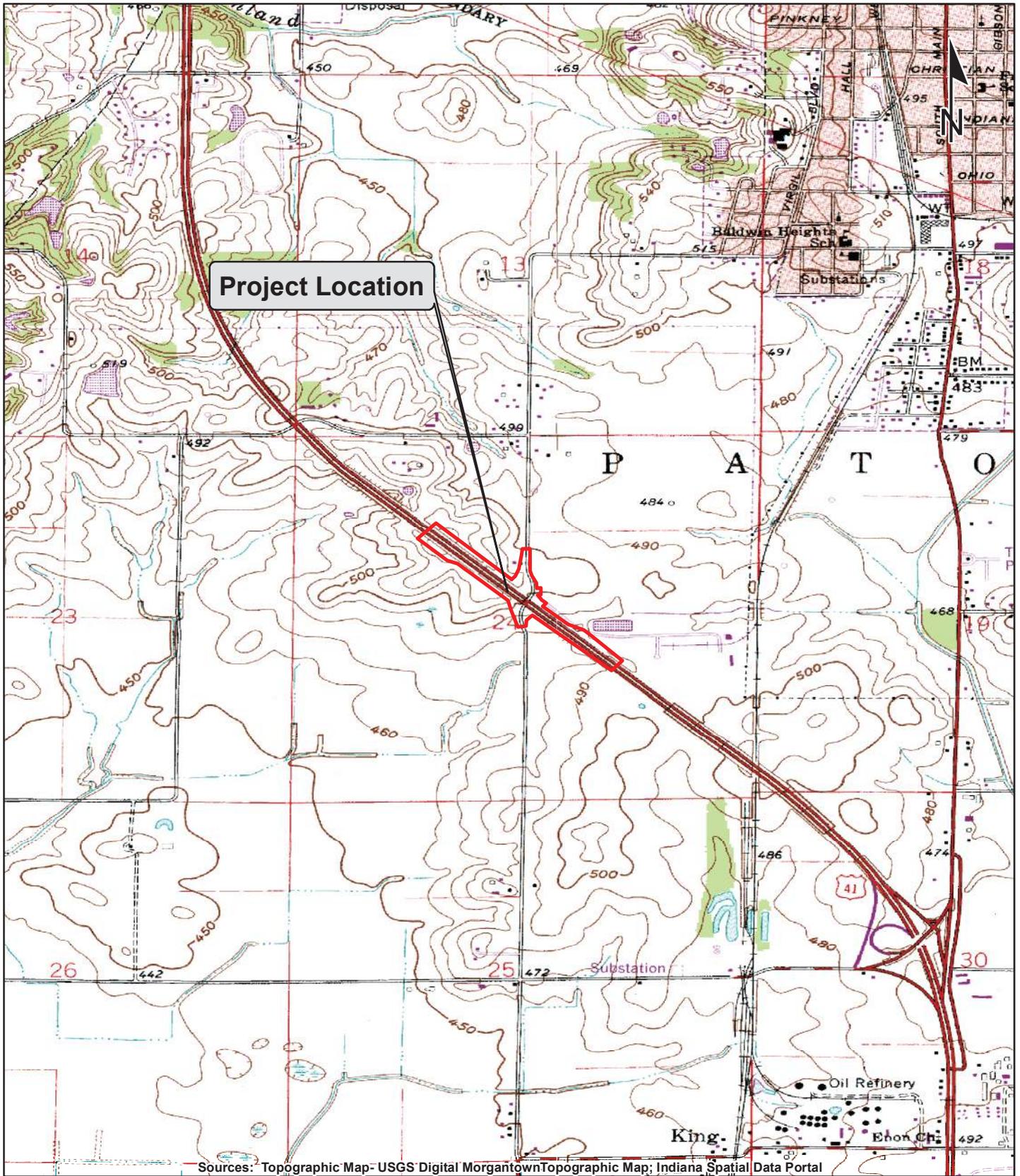


- Investigated Area
- Gibson County
- NRCS Land Resource Regions**
- Northeast and Northcentral
- Midwest
- Eastern Mountains and Piedmont



Project Location Map
US 41 and CR 100 W.
Intersection Improvement
Gibson County, IN

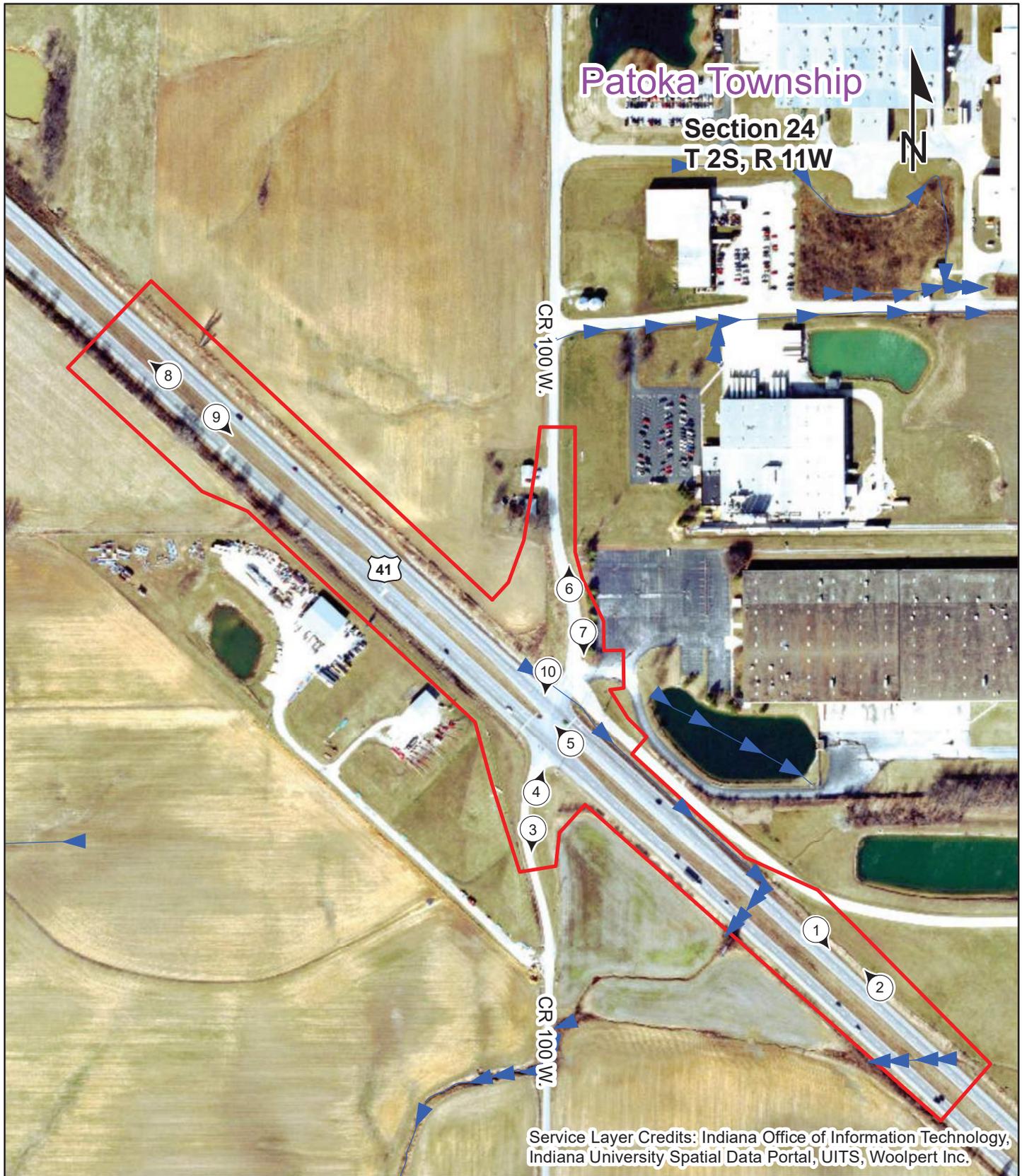
Des. No. 1800223	HNTB Graphics created by HNTB Corporation (2020)
1 inch = 5 miles	



 Investigated Area	USGS (1:24,000) Princeton Topographic Quadrangle Map US 41 and CR 100 W. Intersection Improvement Gibson County, Indiana	
	Des. No. 1800223 0 1,000 2,000 Feet 	1 inch = 2,000 feet



 Project Area  NHD Flowlines	Project Aerial Map US 41 and CR 100 W. Intersection Improvement Gibson County, Indiana
0 175 350  Feet	Des. No. 1800223
	1 inch = 350 feet
	
	Graphics created by HNTB Corporation (2020)



<ul style="list-style-type: none">  NHD Flowlines  Project Area  Photo Location 	<p>0 175 350  Feet</p>	<p>Photo Location Map US 41 and CR 100 W Intersection Improvement Gibson County, Indiana</p>	<p>Des. No. 1800223</p> <hr/> <p>1 inch = 350 feet</p>	<p>HNTB Graphics created by HNTB Corporation (2020)</p>
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1. Looking southeast within right of way of US 41



2. Looking northwest within right of way of US 41



3. Looking south along CR 100 W.



4. Looking northeast along CR 100 W.



5. Looking northwest within median at the intersection of CR 100 W. and US 41



6. Looking northwest along maintained roadside on CR 100 W.



7. Looking southeast along maintain roadside on CR 100 W.



8. Looking northwest within median



9. Looking southeast within the median



10. Looking south towards intersection of US 41 and CR 100 W.

PROJECT	DESIGNATION
180223	180223
CONTRACT	
B-41404	

KIN PROJECT INFORMATION		
DESIGNATION	PROJECT DESCRIPTION	
1593063	US 41 SOUTHBOUND OVER CSX RAILROAD	LEAD DES
1593064	US 41 NORTHBOUND OVER CSX RAILROAD	

INDIANA DEPARTMENT OF TRANSPORTATION



ROAD PLANS U.S. 41 INTERSECTION IMPROVEMENT

ROUTE: U.S. 41 FROM: RP 28+0.62 TO: RP 29+0.05

PROJECT NO.

180223
180223
180223

P.E.
R/W
CONST.

PROJECT DESCRIPTION

INTERSECTION IMPROVEMENTS AND ROADWAY MODIFICATIONS ON U.S. 41 AT C.R. 100 W APPROXIMATELY 0.7 MILES SOUTH OF THE U.S. 41 / C.R. 150 S INTERSECTION IN SECTION 24, T-2-S, R-11-W, PATOKA TOWNSHIP, GIBSON COUNTY, INDIANA

TRAFFIC DATA	U.S. 41	CR 100 W	SOUTH 100 W
A.A.D.T. (2023)	15,400 V.P.D.	3,300 V.P.D.	150 V.P.D.
A.A.D.T. (2043)	18,200 V.P.D.	3,500 V.P.D.	160 V.P.D.
D.H.V. (2043)	1,600 V.P.H.	420 V.P.H.	16 V.P.H.
DIRECTIONAL DISTRIBUTION	51%	51%	50%
TRUCKS	19% OF AADT	19% OF AADT	38% OF AADT
	9% OF DHV	9% OF DHV	50% OF DHV

DESIGN DATA			
DESIGN SPEED	60 MPH	40 MPH	30 MPH
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)	3R (NON-FREEWAY)	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL	MAJOR COLLECTOR	LOCAL ROAD
RURAL/URBAN	URBAN (SUBURBAN)	URBAN (SUBURBAN)	URBAN (SUBURBAN)
TERRAIN	LEVEL	LEVEL	LEVEL
ACCESS CONTROL	PARTIAL	PARTIAL	PARTIAL



LATITUDE: 38°19'36" N LONGITUDE: 87°35'05" W

GROSS LENGTH: 0.40 MI.
NET LENGTH: 0.40 MI.
MAX. GRADE: 3.00 %

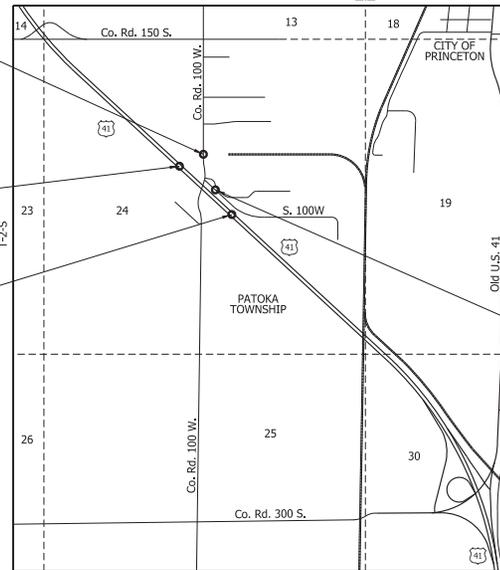
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STAGE 2 PLANS
04/09/2021

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LINE "S-3-K"

END PROJECT
PROJECT NO. 1800223
P.O.T. STA. 1343+06.09
LINE "K"

BEGIN PROJECT
PROJECT NO. 1800223
P.O.T. STA. 1320+42.84
LINE "K"



BEGIN CONSTRUCTION
PROJECT NO. 1800223
P.O.C. STA. 103+60.00
LINE "FRONTAGE"

NOTE TO REVIEWER
PLEASE REVIEW CORRESPONDENCE MEMO FOR DOCUMENTATION OF DESIGN DECISIONS BEFORE REVIEWING PLANS

LOCATION MAP
PATOKA TOWNSHIP,
GIBSON COUNTY

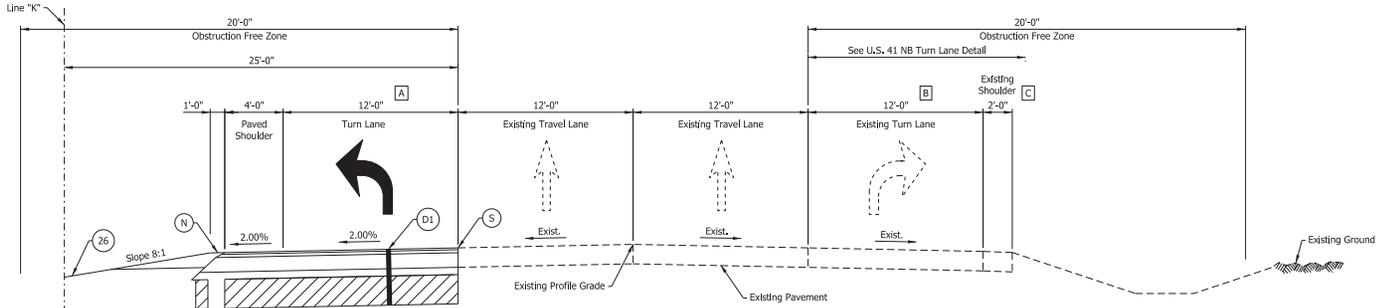
HNTB
THE HNTB COMPANIES
INFRASTRUCTURE SOLUTIONS
111 MONUMENT CIRCLE
SUITE 1200
INDIANAPOLIS, IN 46204-5178

DRAFT
NOT FOR CONSTRUCTION

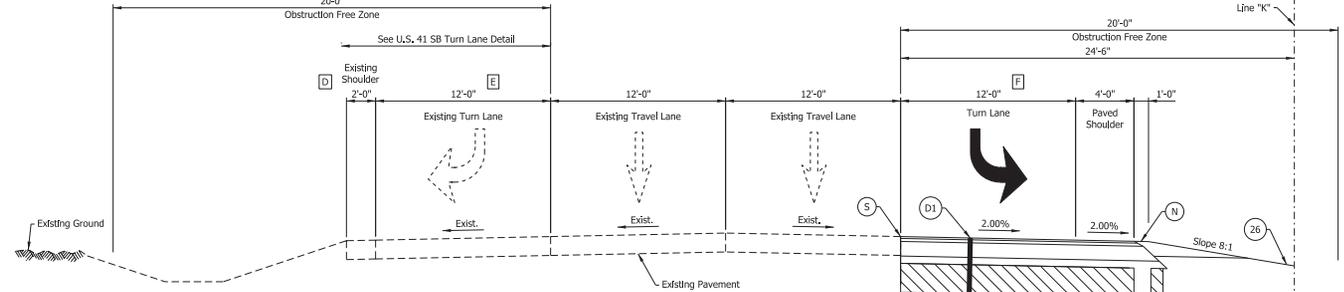
PLANS PREPARED BY: HNTB INDIANA, INC. (317) 636-4682 PHONE NUMBER
CERTIFIED BY: _____ DATE
APPROVED FOR LETTING: _____ DATE
INDIANA DEPARTMENT OF TRANSPORTATION

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020
TO BE USED WITH THESE PLANS

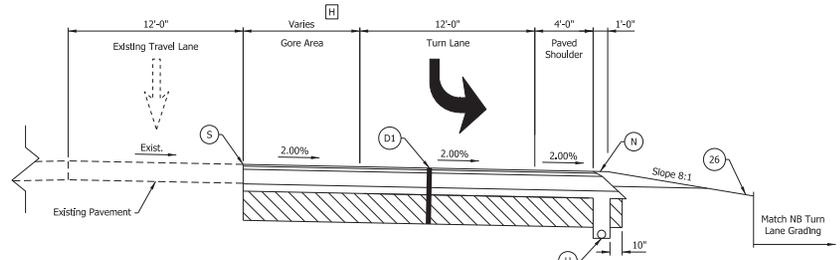
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ELECTRONIC	1 OF 70
CONTRACT	PROJECT
B-41404	1800223



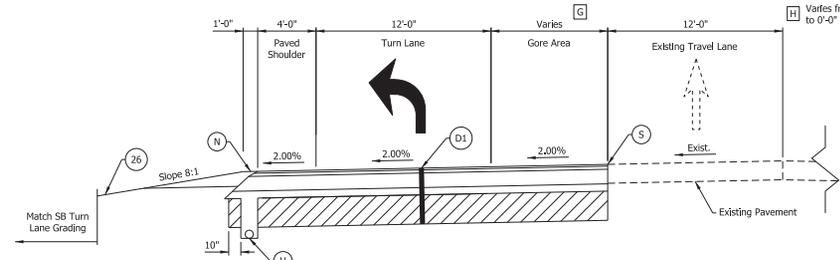
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 STA. 1329+78.40 "K" TO STA. 1341+25.17 "K"



TYPICAL SECTION U.S. 41 SB
 STA. 1321+50.23 "K" TO STA. 1332+02.77 "K"
 STA. 1336+00.00 "K" TO STA. 1340+86.00 "K"



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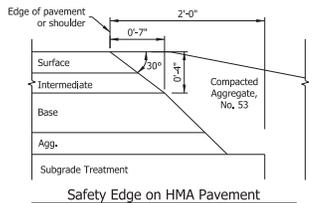


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- Varies from 0'-0" at Sta. 1322+20.00 to 11'-0" at Sta. 1323+20.00
- Width is 11'-0" from Sta. 1323+20.00 to Sta. 1325+12.38
- Width is 0'-0" from Sta. 1329+78.40 to Sta. 1332+50.00
- Varies from 0'-0" at Sta. 1332+50.00 to 12'-0" at Sta. 1333+50.00
- Width is 12'-0" from Sta. 1333+50.00 to Sta. 1341+25.17
- Existing Turn Lane from Sta. 1324+55.00 to Sta. 1329+00.00
- Width is 2'-0" Where Adjacent to Turn Lane
- Width is 10'-0" Where Adjacent to Thru Travel Lane

LEGEND

- D1 165 #/Syd. OC/OA HMA, 4, 76, Surface, 9.5mm, on 275 #/Syd. OC/OA HMA, 4, 76, Intermediate, 19.0mm, on 1350 #/Syd. OC/OA HMA, 4, 64, Base, 25.0mm, on 6" of Compacted Aggregate, No. 53, on Subgrade Treatment, Type IBC
- S Saw Cut (Full Depth) (No Direct Pay)
- U Pipe, Type 4, Circular, Underdrain (See Std. Dwg. No. 718-UNDR-01)
- N Compacted Aggregate, No. 53
- 26 Seed Mixture, U
- D Width is 2'-0" Where Adjacent to Turn Lane
- Width is 10'-0" Where Adjacent to Thru Travel Lane
- E Existing Turn Lane from Sta. 1321+50.23 to Sta. 1328+50.00
- Width is 12'-0" from Sta. 1321+50.23 to Sta. 1328+50.00
- Varies from 12'-0" at Sta. 1328+50.00 to 0'-0" at Sta. 1329+78.40
- F Width is 0'-0" from Sta. 1329+78.40 to Sta. 1332+02.77
- Width is 12'-0" from Sta. 1336+00.00 to Sta. 1339+86.00
- Varies from 12'-0" at Sta. 1339+86.00 to 0'-0" at Sta. 1340+86.00



Safety Edge on HMA Pavement

- G Varies from 0'-0" at Sta. 1328+50.00 to 12'-4" at Sta. 1329+78.40
- H Varies from 12'-6" at Sta. 1332+02.77 to 0'-0" at Sta. 1333+50.00

NOTE TO REVIEWER

SEE ROADWAY PROFILE AND CROSS SECTION SHEETS FOR DITCH DEPTH INFORMATION. PRELIMINARY REVIEW OF EXISTING AND PROPOSED UNDERDRAIN OUTLET LOCATIONS INDICATE NO ISSUE WITH FUTURE UNDERDRAIN DESIGN. UNDERDRAIN DESIGN SHALL BE PROVIDED AT FINAL FIELD CHECK AS REQUIRED BY 14-2.01(11).

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWING: MTD	
CHECKED: KKP	CHECKED: KKP	

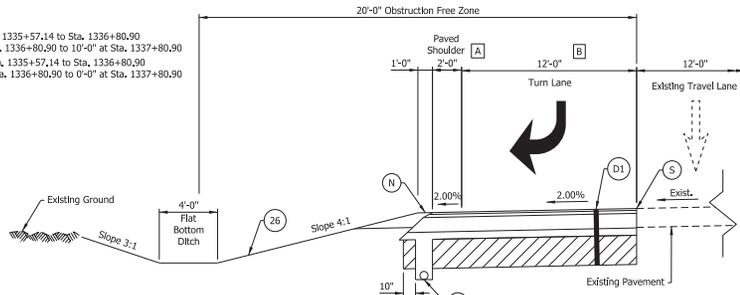
INDIANA DEPARTMENT OF TRANSPORTATION

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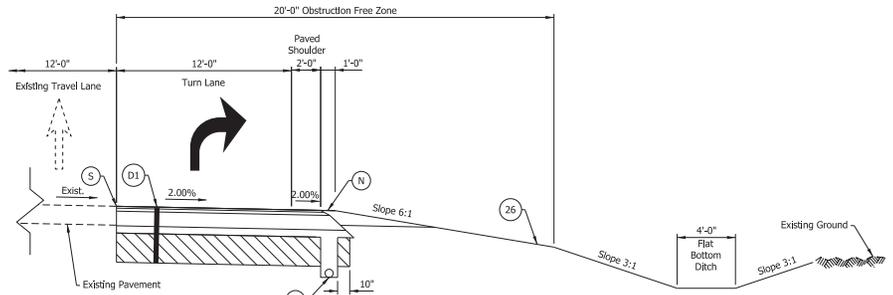
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ELECTRONIC	3 of 70
CONTRACT	PROJECT
8-41404	1800223

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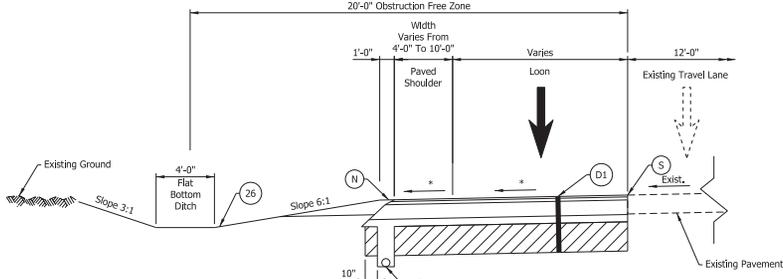
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Varies from 12'-0" at Sta. 1336+80.90 to 0'-0" at Sta. 1337+80.90



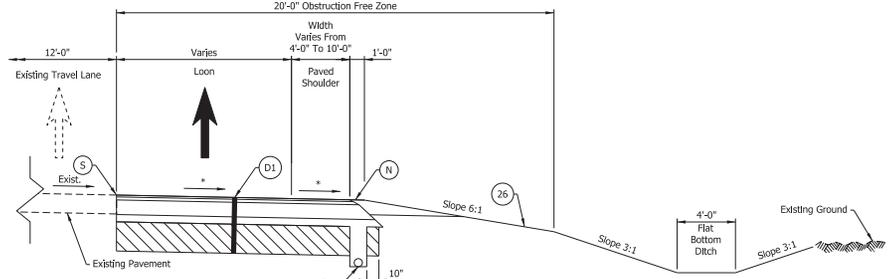
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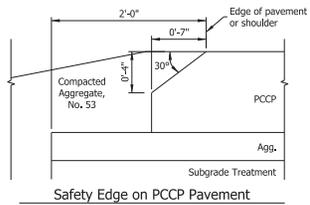
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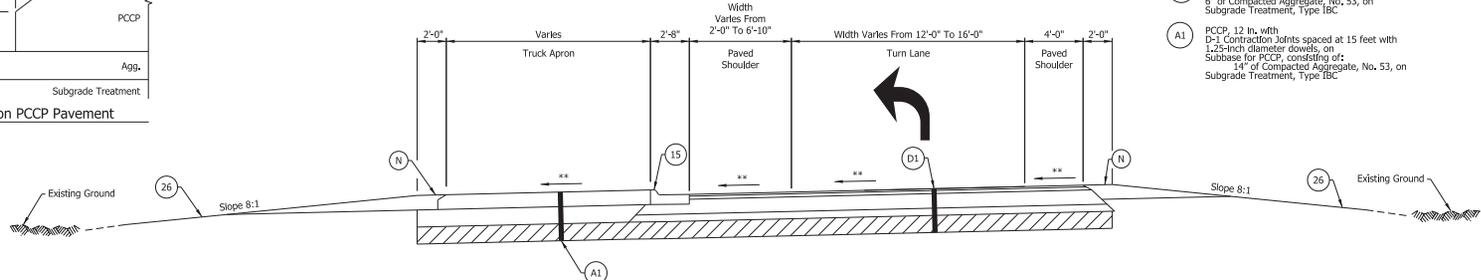
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TYPICAL SECTION U.S. 41 NB LOON
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Safety Edge on PCCP Pavement



TYPICAL SECTION LEFT TURN LANE (THRU ROADWAY MEDIAN)
STA. 1320+88.99 "K" TO STA. 1321+50.23 "K"
STA. 1341+25.17 "K" TO STA. 1341+86.46 "K"

- LEGEND**
- (S) Saw Cut (Full Depth) (No Direct Pay)
 - (U) Pipe, Type 4, Circular, Underdrain (See Std. Dwg. No. 718-LUNDR-01)
 - (N) Compacted Aggregate, No. 53
 - (26) Seed Mixture, U
 - (15) Curb And Gutter, B, Concrete (Sloping) (See Std. Dwg. E-605-CCCG-01)
 - * Proposed Cross Slope to Match Existing Slope of Adjacent Lane.
 - ** Cross Slope Varies, Refer to Spot Elevations Details for Additional Information.
 - (D1) 165 #/Syd. CC/QA HMA, 4, 76, Surface, 9.5mm, on 225 #/Syd. CC/QA HMA, 4, 76, Intermediate, 10.0mm, on 1320 #/Syd. CC/QA HMA, 4, 64, Base, 25.0mm, on 6" of Compacted Aggregate, No. 53, on Subgrade Treatment, Type IBC
 - (A1) PCCP, 12 In. with D-1 Contraction Joints spaced at 15 feet with 1/2-inch diameter dowels, on Subbase for PCCP, consisting of: 14" of Compacted Aggregate, No. 53, on Subgrade Treatment, Type IBC.

NOTE TO REVIEWER

SEE ROADWAY PROFILE AND CROSS SECTION SHEETS FOR DITCH DEPTH INFORMATION. PRELIMINARY REVIEW OF EXISTING AND PROPOSED UNDERDRAIN OUTLET LOCATIONS INDICATE NO ISSUE WITH FUTURE UNDERDRAIN DESIGN. UNDERDRAIN DESIGN SHALL BE PROVIDED AT FINAL FIELD CHECK AS REQUIRED BY 14-2.01(11).

DRAFT
NOT FOR CONSTRUCTION

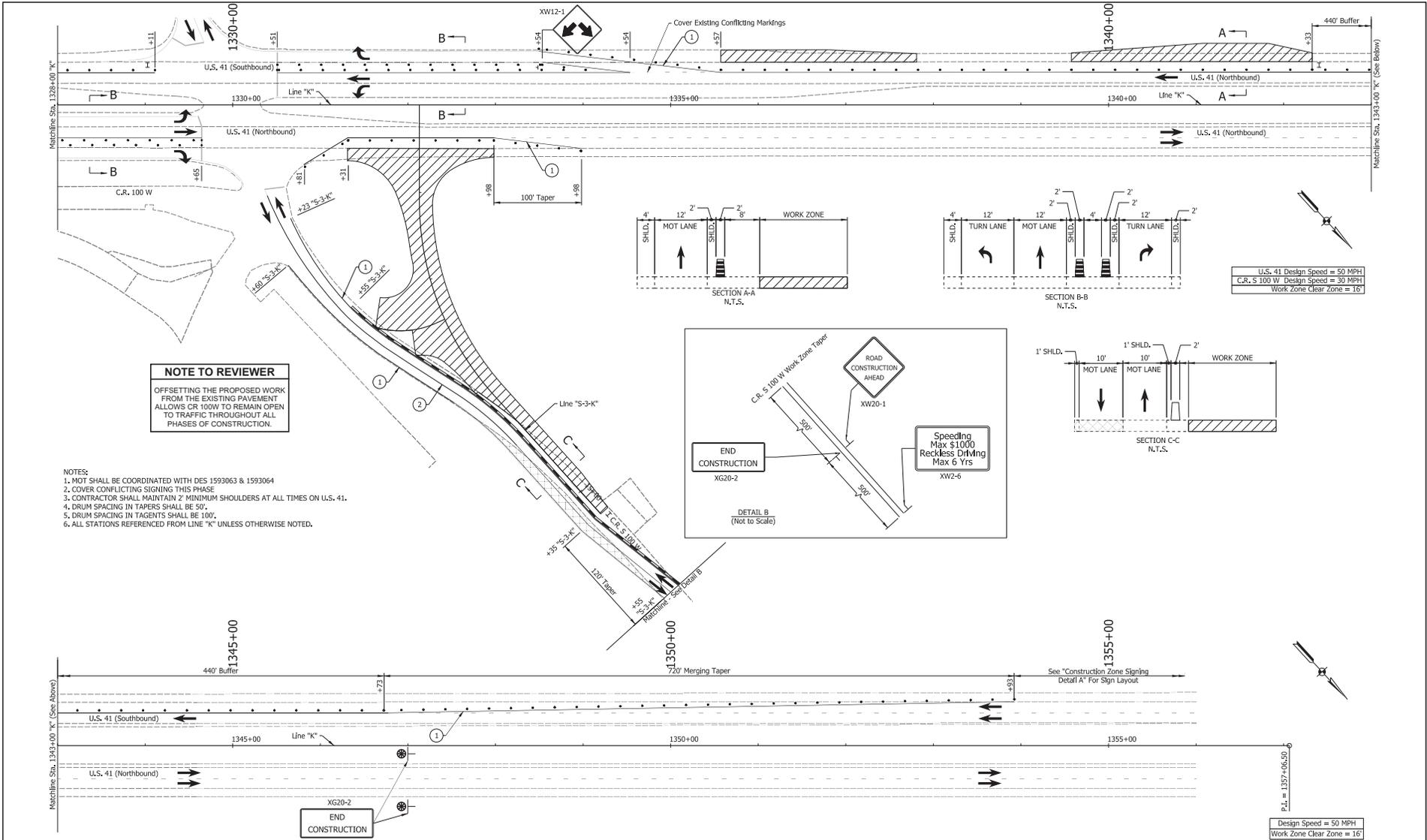
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS
Line "K"

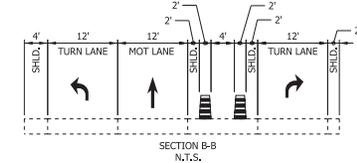
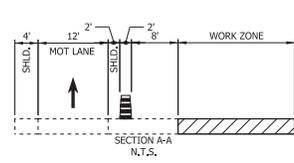
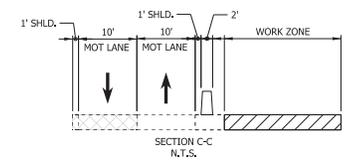
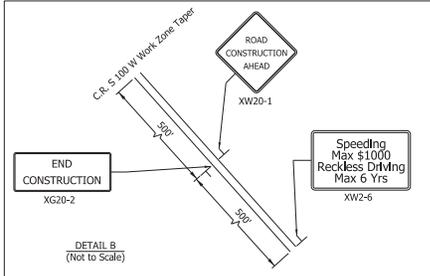
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1/4"=1'-0"	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	4 of 70
CONTRACT	PROJECT
8-41404	1800223

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 4/27/2021 4:55:27 pm
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NOTE TO REVIEWER
 OFFSETTING THE PROPOSED WORK FROM THE EXISTING PAVEMENT ALLOWS CR 100W TO REMAIN OPEN TO TRAFFIC THROUGHOUT ALL PHASES OF CONSTRUCTION.

- NOTES:**
1. MOT SHALL BE COORDINATED WITH DES 1593063 & 1593064
 2. COVER CONFLICTING SIGNING THIS PHASE
 3. CONTRACTOR SHALL MAINTAIN 2' MINIMUM SHOULDERS AT ALL TIMES ON U.S. 41.
 4. DRUM SPACING IN TAPERS SHALL BE 50'.
 5. DRUM SPACING IN TAGENTS SHALL BE 100'.
 6. ALL STATIONS REFERENCED FROM LINE "K" UNLESS OTHERWISE NOTED.



U.S. 41 Design Speed = 50 MPH
 C.R. S 100 W Design Speed = 30 MPH
 Work Zone Clear Zone = 16'

Design Speed = 50 MPH
 Work Zone Clear Zone = 16'

MAINTENANCE OF TRAFFIC LEGEND

- | | | |
|----------------------|---|---------------------------|
| CONSTRUCTION AREA | TYPICAL SIGN STANDARD | TEMPORARY TRAFFIC BARRIER |
| STANDARD DRUM | TYPE "A" CONSTRUCTION WARNING LIGHT | TYPE III-A BARRICADE |
| DIRECTION OF TRAFFIC | TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE) | TEMPORARY PAVEMENT |
| | TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW) | |

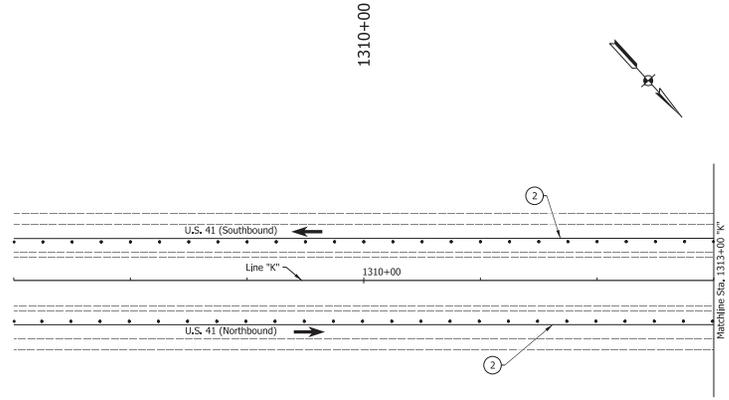
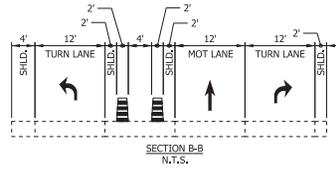
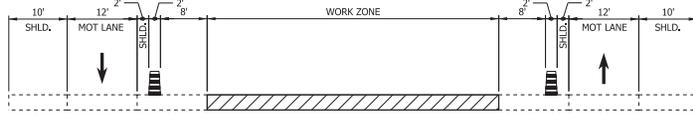
DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA DEPARTMENT OF TRANSPORTATION
 MAINTENANCE OF TRAFFIC - PHASE 1
 Line "K", Line "S-3-K", & Line "FRONTAGE"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	MOF-02
CONTRACT	8 of 70
PROJECT	1800223
8-41404	

- NOTES:
 1. MOT SHALL BE COORDINATED WITH DES 1593063 & 1593064
 2. CONTRACTOR SHALL MAINTAIN 2' MINIMUM SHOULDERS AT ALL TIMES.
 3. DRUM SPACING IN TAPERS SHALL BE 50'.
 4. DRUM SPACING IN TAGENTS SHALL BE 100'.
 5. ALL STATIONS REFERENCED FROM LINE "K" UNLESS OTHERWISE NOTED.

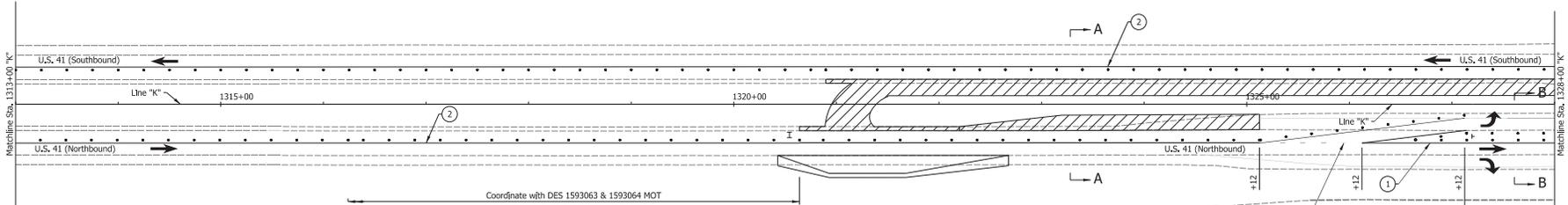


1315+00

1320+00

1325+00

Design Speed = 50 MPH
Work Zone Clear Zone = 16'



Design Speed = 50 MPH
Work Zone Clear Zone = 16'



MAINTENANCE OF TRAFFIC LEGEND

- CONSTRUCTION AREA
- STANDARD DRUM
- DIRECTION OF TRAFFIC
- TYPICAL SIGN STANDARD
- TYPE "A" CONSTRUCTION WARNING LIGHT
- TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE)
- TYPE III-A BARRICADE
- TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW)

DRAFT
NOT FOR CONSTRUCTION

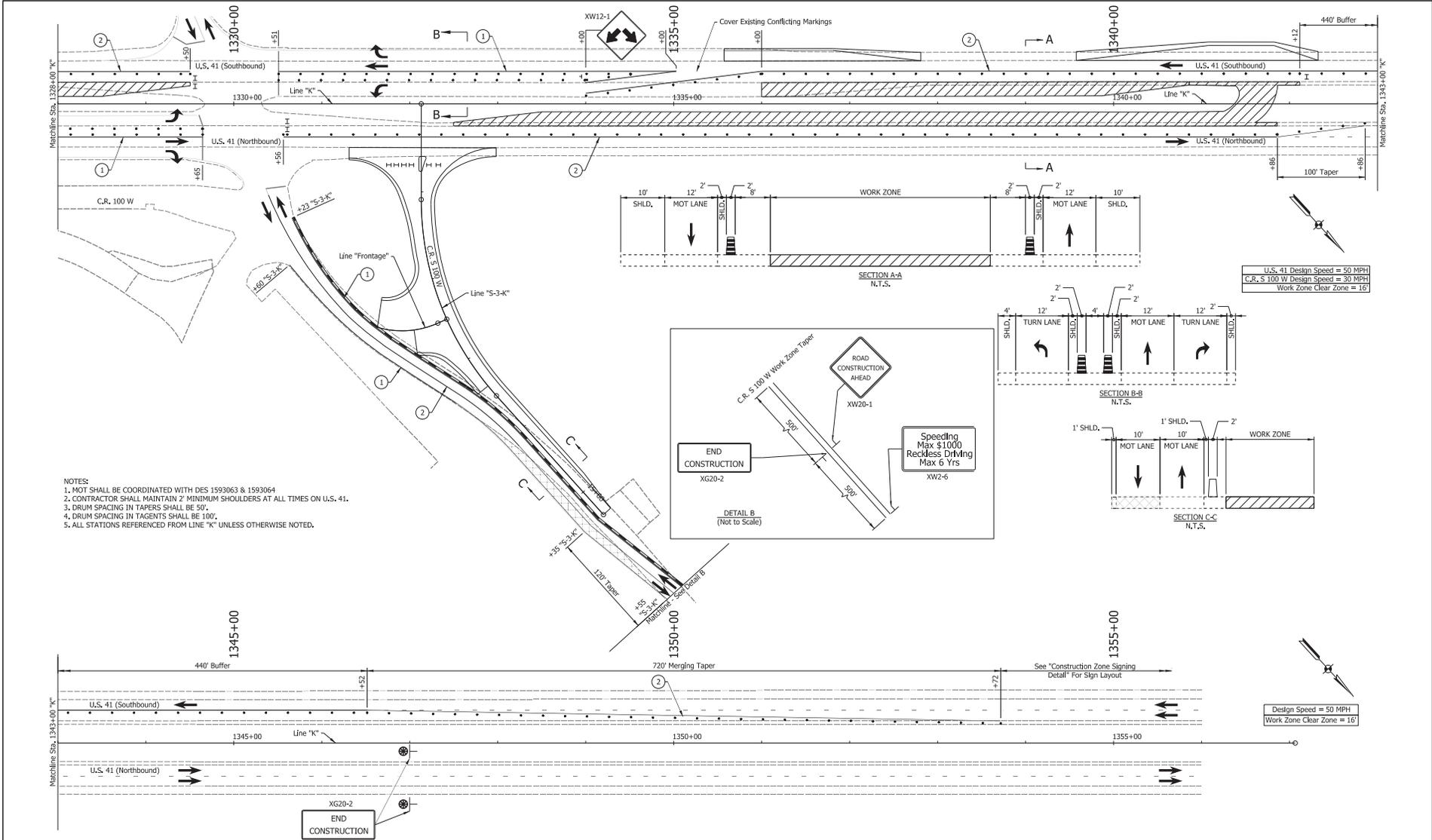
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE 2
Line "K", Line "S-3-K", & Line "FRONTAGE"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	9 of 70
CONTRACT	PROJECT
8-41404	1800223

AP/WAVS
4/27/2024 4:58:20 pm
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- NOTES:
1. MOT SHALL BE COORDINATED WITH DES 1593063 & 1593064
 2. CONTRACTOR SHALL MAINTAIN 2' MINIMUM SHOULDERS AT ALL TIMES ON U.S. 41.
 3. DRUM SPACING IN TAPERS SHALL BE 50'.
 4. DRUM SPACING IN TAGENTS SHALL BE 100'.
 5. ALL STATIONS REFERENCED FROM LINE "K" UNLESS OTHERWISE NOTED.

MAINTENANCE OF TRAFFIC LEGEND

- | | | | |
|--|---|--|---|
| | CONSTRUCTION AREA | | TEMPORARY TRAFFIC BARRIER |
| | STANDARD DRUM | | TYPE III-A BARRICADE |
| | DIRECTION OF TRAFFIC | | TYPE "A" CONSTRUCTION WARNING LIGHT |
| | TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE) | | TEMPORARY PAVEMENT |
| | TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW) | | TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW) |

DRAFT
NOT FOR CONSTRUCTION

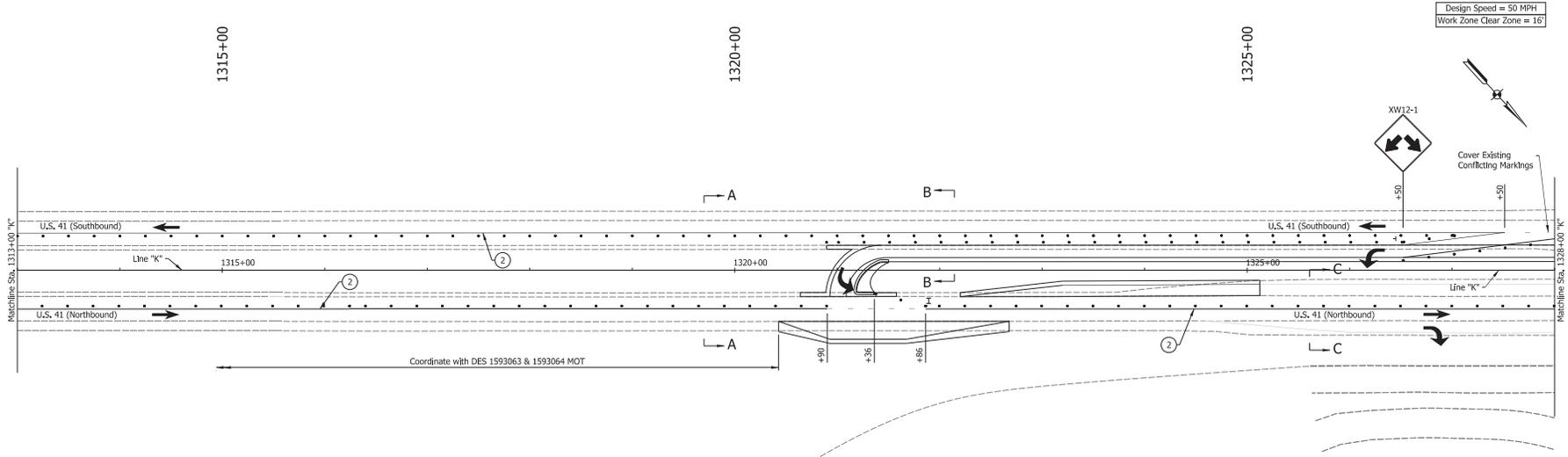
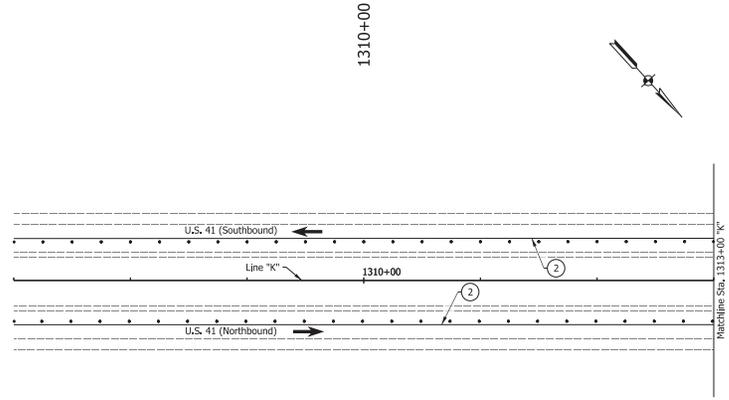
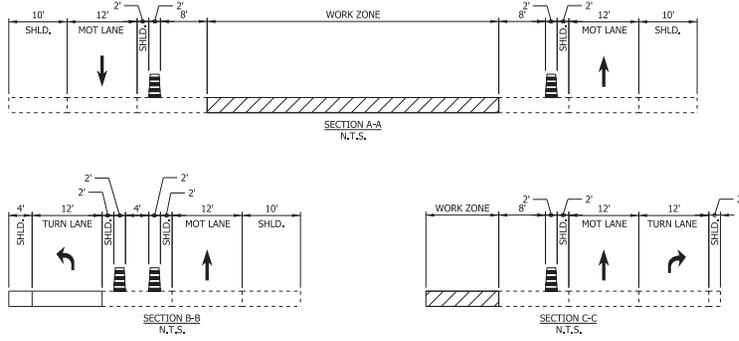
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWING: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE 2
Line "K", Line "S-3-K", & Line "FRONTAGE"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	10 of 70
CONTRACT	PROJECT
8-41494	1800223

- NOTES:
 1. MOT SHALL BE COORDINATED WITH DES 1593063 & 1593064
 2. CONTRACTOR SHALL MAINTAIN 2' MINIMUM SHOULDERS AT ALL TIMES.
 3. DRUM SPACING IN TAPERS SHALL BE 50'.
 4. DRUM SPACING IN TAGENTS SHALL BE 100'.
 5. ALL STATIONS REFERENCED FROM LINE "K" UNLESS OTHERWISE NOTED.



MAINTENANCE OF TRAFFIC LEGEND

- CONSTRUCTION AREA
- STANDARD DRUM
- DIRECTION OF TRAFFIC
- TYPICAL SIGN STANDARD
- TYPE "A" CONSTRUCTION WARNING LIGHT
- TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE)
- TYPE III-A BARRICADE
- TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW)

DRAFT
NOT FOR CONSTRUCTION

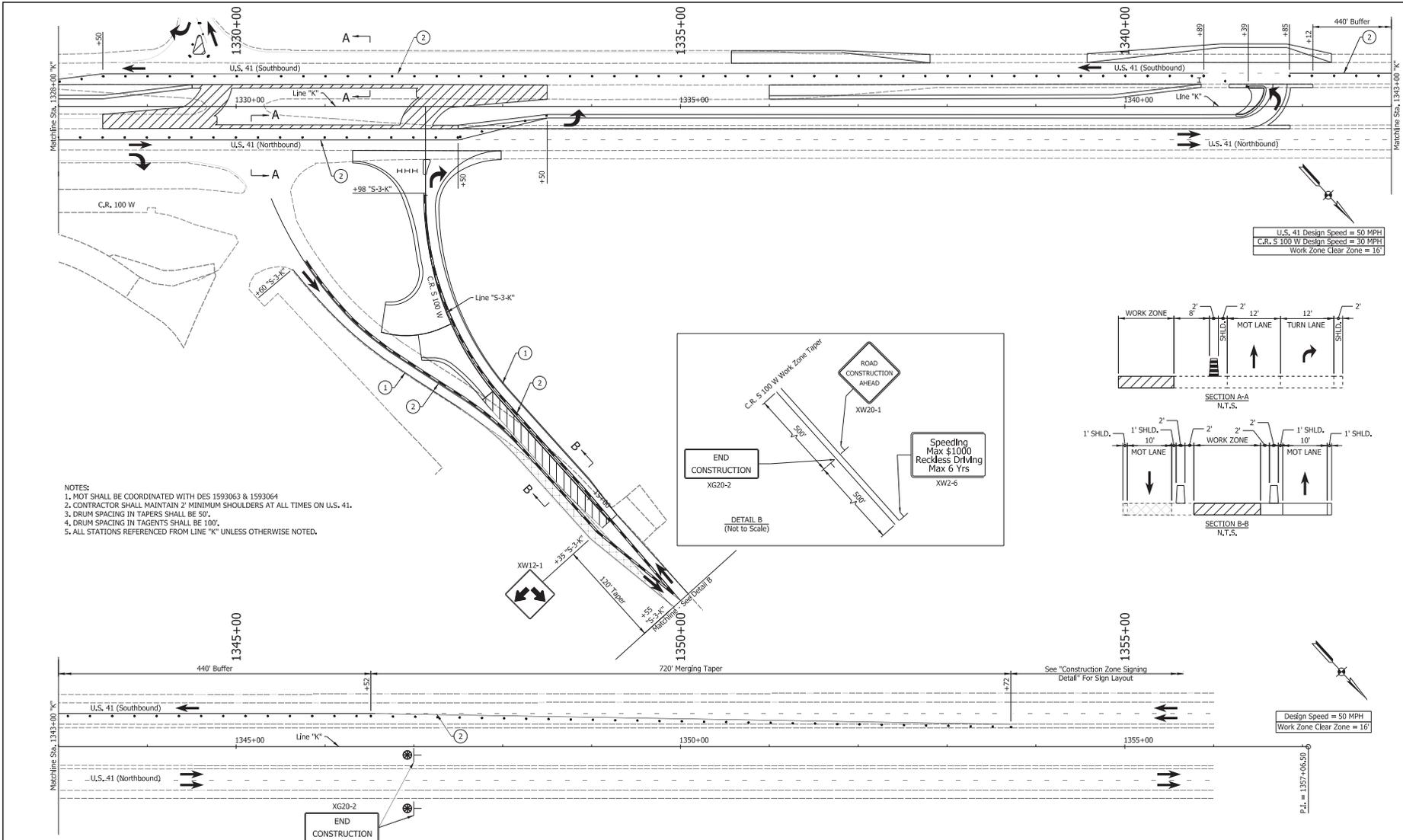
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE 3
Line "K", Line "S-3-K", & Line "FRONTAGE"

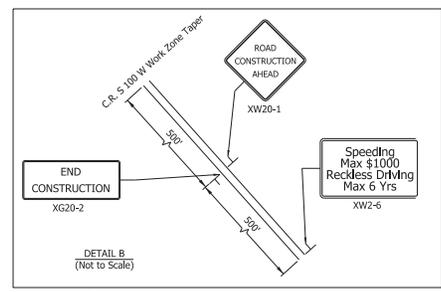
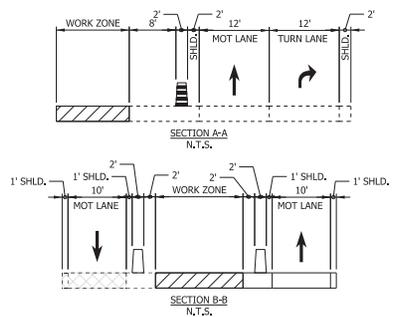
HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	11 of 70
CONTRACT	PROJECT
8-41404	1800223

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- NOTES:
1. MOT SHALL BE COORDINATED WITH DES 1593063 & 1593064
 2. CONTRACTOR SHALL MAINTAIN 2' MINIMUM SHOULDERS AT ALL TIMES ON U.S. 41.
 3. DRUM SPACING IN TAPERS SHALL BE 50'.
 4. DRUM SPACING IN TAGENTS SHALL BE 100'.
 5. ALL STATIONS REFERENCED FROM LINE "K" UNLESS OTHERWISE NOTED.

U.S. 41 Design Speed = 50 MPH
 C.R. S 100 W Design Speed = 30 MPH
 Work Zone Clear Zone = 16'



Design Speed = 50 MPH
 Work Zone Clear Zone = 16'

MAINTENANCE OF TRAFFIC LEGEND

	CONSTRUCTION AREA		TYPICAL SIGN STANDARD		TEMPORARY TRAFFIC BARRIER
	STANDARD DRUM		TYPE "A" CONSTRUCTION WARNING LIGHT		TYPE III-A BARRICADE
	DIRECTION OF TRAFFIC		TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE)		TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW)

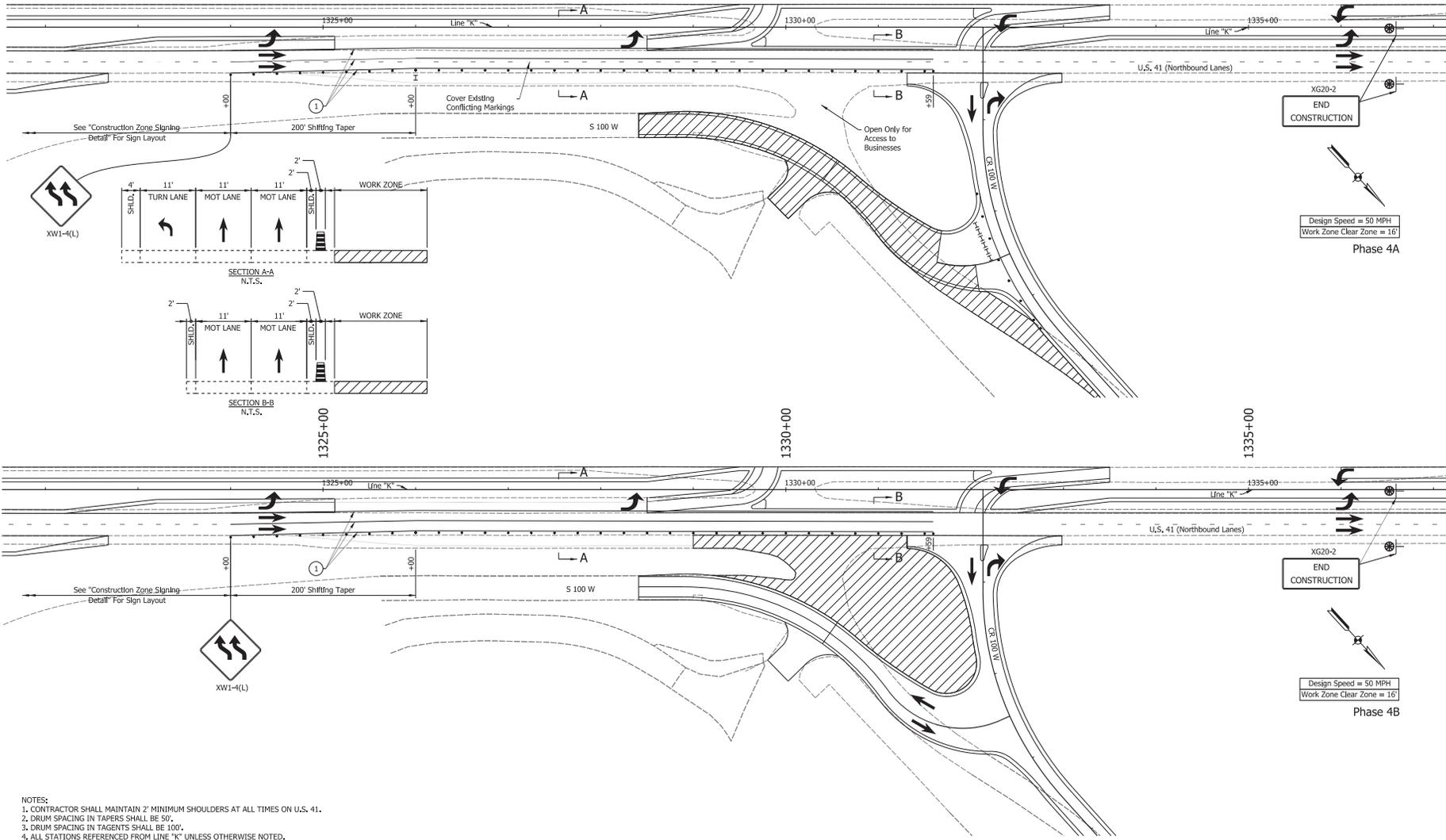
DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
 DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE 3
 Line "K", Line "S-3-K", & Line "FRONTAGE"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	12 of 70
CONTRACT	PROJECT
8-41494	1800223



- NOTES:
1. CONTRACTOR SHALL MAINTAIN 2' MINIMUM SHOULDERS AT ALL TIMES ON U.S. 41.
 2. DRUM SPACING IN TAPERS SHALL BE 50'.
 3. DRUM SPACING IN TAGENTS SHALL BE 100'.
 4. ALL STATIONS REFERENCED FROM LINE "K" UNLESS OTHERWISE NOTED.

MAINTENANCE OF TRAFFIC LEGEND

	CONSTRUCTION AREA		TYPICAL SIGN STANDARD		TYPE III-A BARRICADE
	STANDARD DRUM		TYPE "A" CONSTRUCTION WARNING LIGHT		TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID YELLOW)
	DIRECTION OF TRAFFIC		TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE)		TEMPORARY PAVEMENT MARKING, REMOVEABLE, 4 IN., (SOLID WHITE)

DRAFT
NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
DEPARTMENT OF TRANSPORTATION

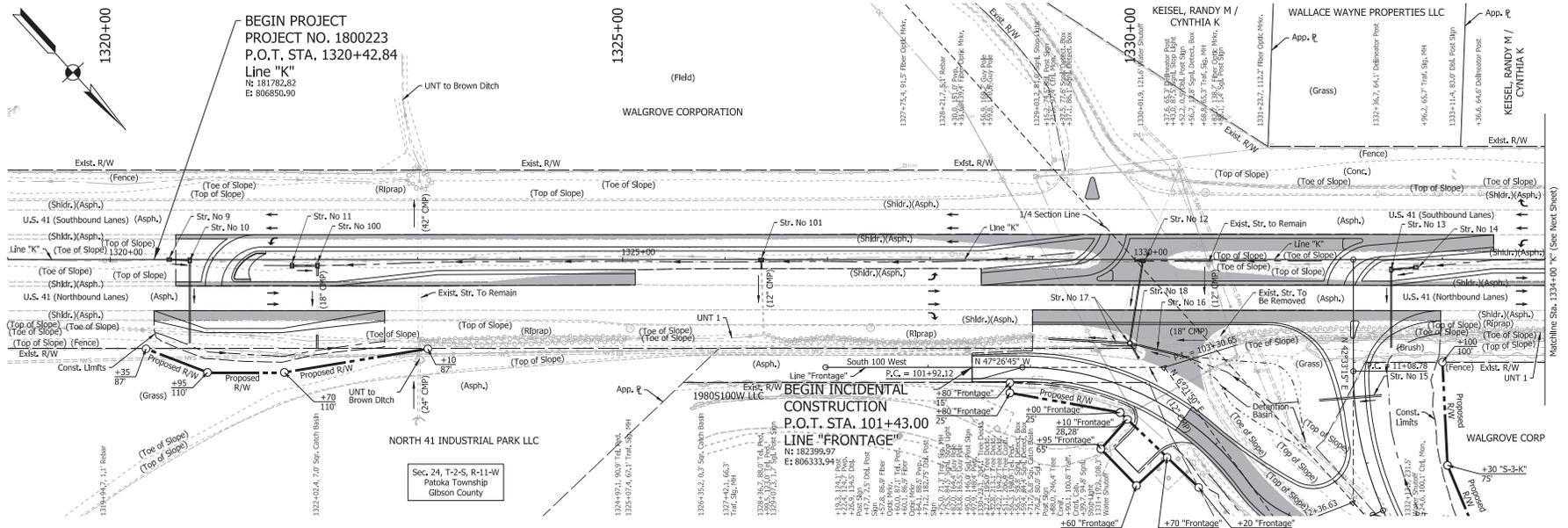
MAINTENANCE OF TRAFFIC - PHASE 4
Line "K", Line "S-3-K", & Line "FRONTAGE"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	13 of 70
CONTRACT	PROJECT
8-41404	1800223

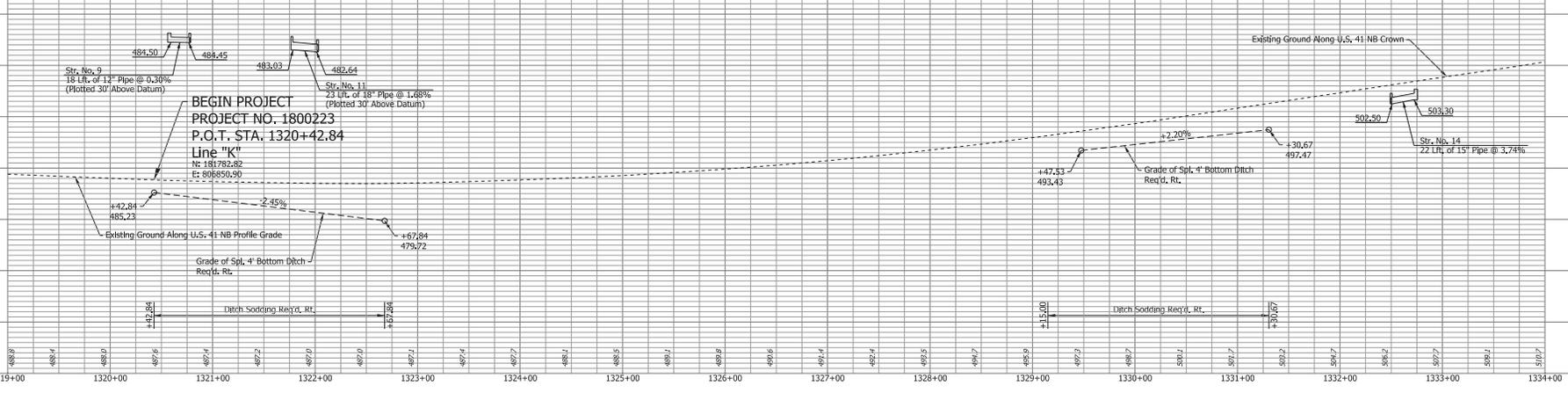
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BEGIN PROJECT
PROJECT NO. 1800223
P.O.T. STA. 1320+42.84
Line "K"
 N: 181782.82
 E: 806850.90



TBM #3
 Cut Square in Catch Basin
 Sta. 1322+03.69 "K", 6.92' Rt., Elev. 484.60



BEGIN PROJECT
PROJECT NO. 1800223
P.O.T. STA. 1320+42.84
Line "K"
 N: 181782.82
 E: 806850.90

Notes:
 Topo Notes for this Sheet are Called Off of Line "K"
 See Sheet PLN-03 for Proposed Curve Data on CR100W and S100W
 All R/W On This Sheet is Described Off of Line "K" Unless Otherwise Shown

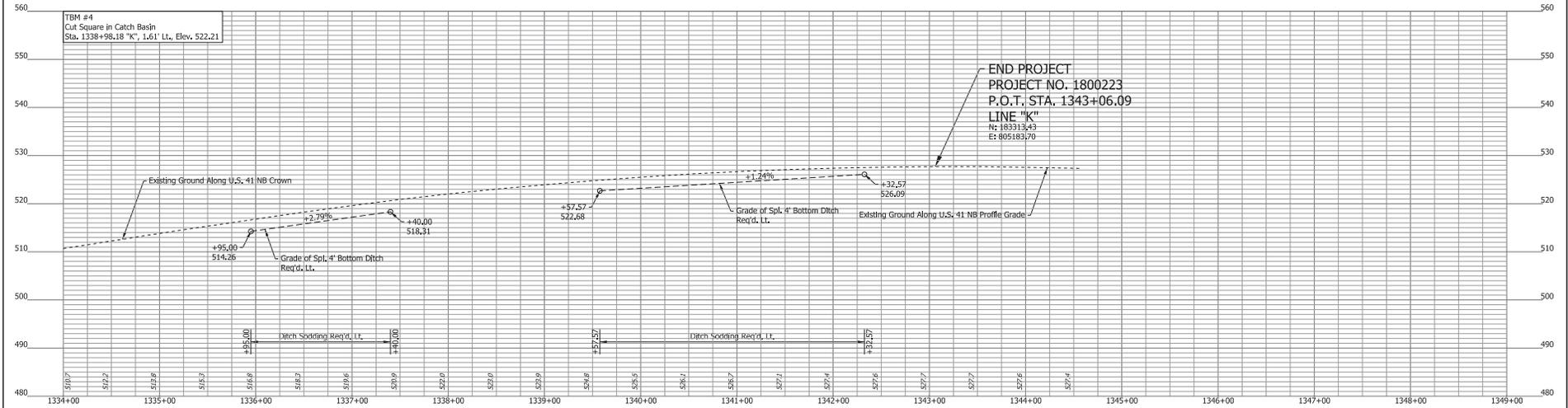
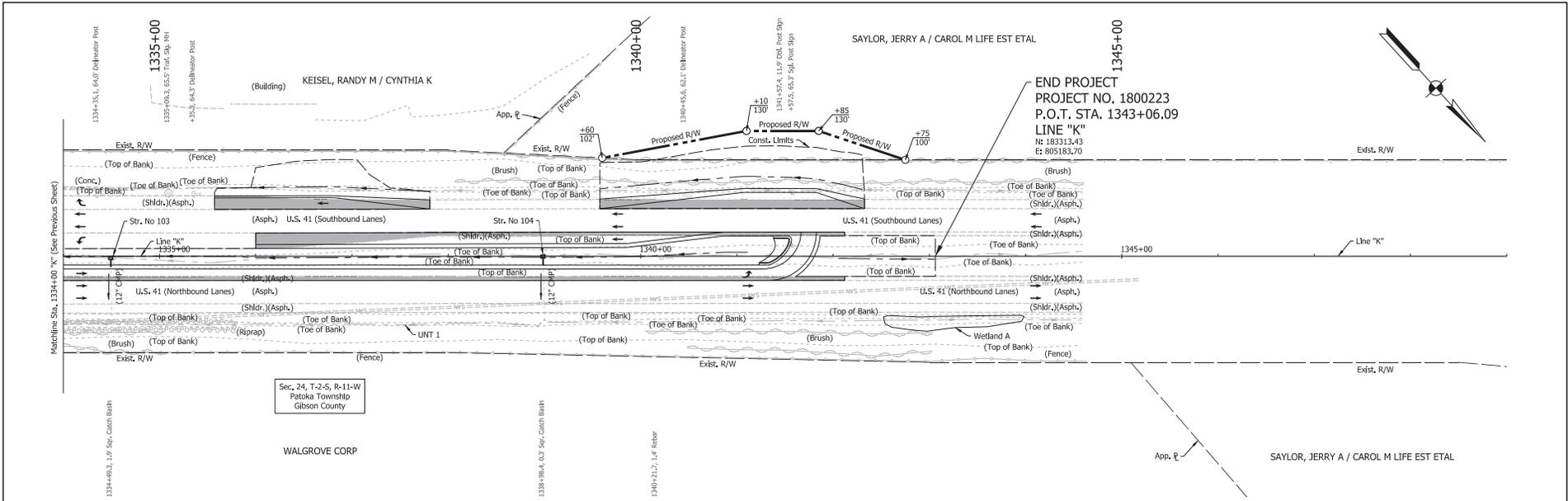
Existing Roadway Removal

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWING: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
DEPARTMENT OF TRANSPORTATION
ROADWAY PLAN AND PROFILE SHEET
U.S. 41
LINE "K"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	
VERTICAL SCALE	DESIGNATION
1"=10'	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	14 of 70
CONTRACT	PROJECT
8-41404	1800223



Notes:
 Topo Notes for this Sheet are Called Off of Line "K"
 All R/W On This Sheet Is Described Off of Line "K" Unless Otherwise Shown

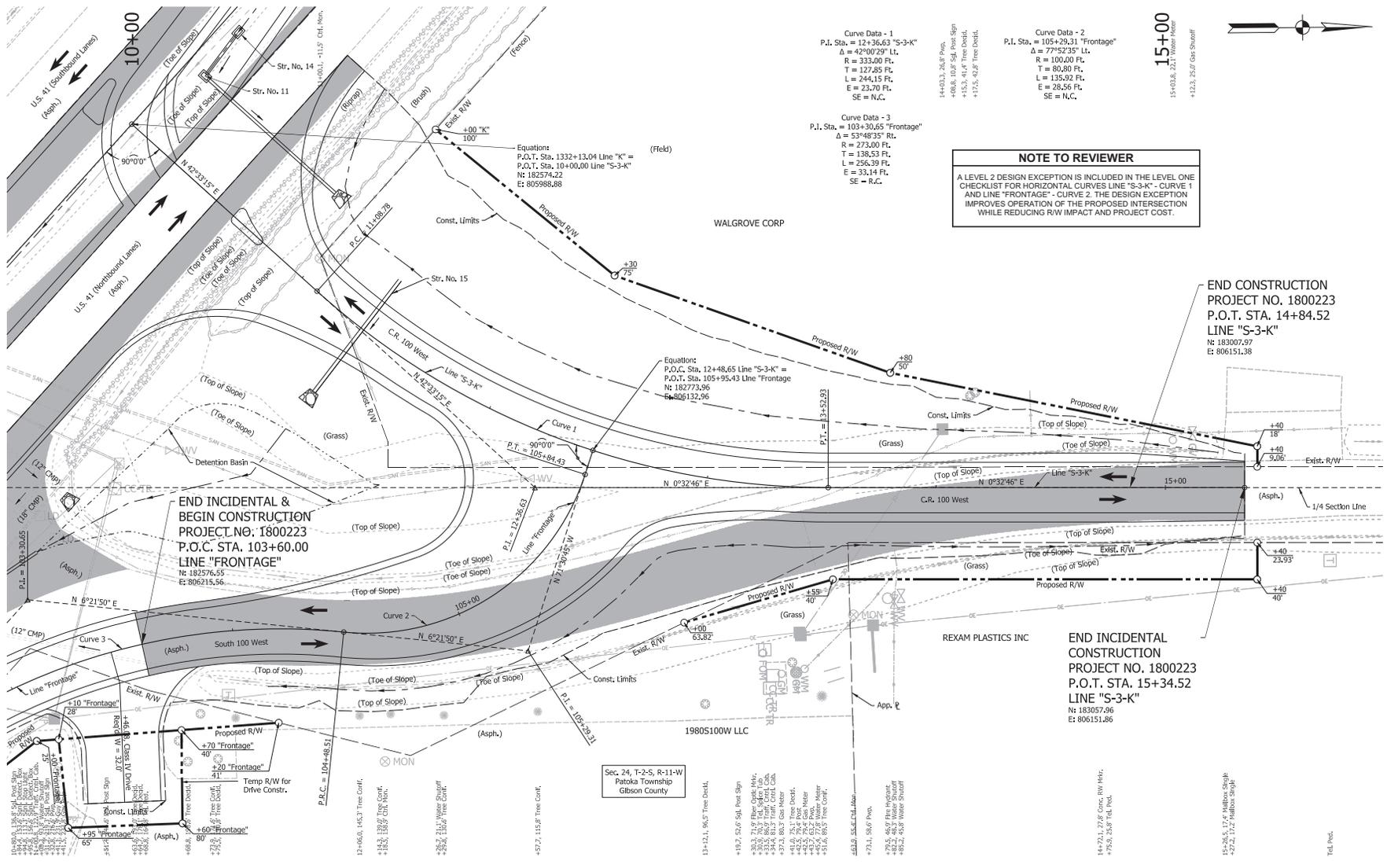
Existing Roadway Removal

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWING: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
 DEPARTMENT OF TRANSPORTATION
 ROADWAY PLAN AND PROFILE SHEET
 U.S. 41
 LINE "K"

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
1"=10'	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	15 of 70
CONTRACT	PROJECT
8-41494	1800223



Curve Data - 1
 P.I. Sta. = 12+36.63 "S-3-K"
 $\Delta = 42^{\circ}00'29"$ Lt.
 R = 333.00 Ft.
 T = 122.85 Ft.
 L = 244.15 Ft.
 E = 23.70 Ft.
 SE = N.C.

14+63.3, 26.8' Pave.
 +48.6, 10.6' Sgl. Post Sign
 +15.3, 4.4' Tree Decid.
 +17.5, 0.8' Tree Decid.

Curve Data - 2
 P.I. Sta. = 105+29.31 "Frontage"
 $\Delta = 77^{\circ}52'35"$ Lt.
 R = 100.20 Ft.
 T = 80.80 Ft.
 L = 135.92 Ft.
 E = 28.56 Ft.
 SE = N.C.

15+00
 15+00.6, 12.1' Water Meter
 +12.3, 25.0' Gas Shutoff



NOTE TO REVIEWER
 A LEVEL 2 DESIGN EXCEPTION IS INCLUDED IN THE LEVEL ONE CHECKLIST FOR HORIZONTAL CURVES LINE "S-3-K" - CURVE 1 AND LINE "FRONTAGE" - CURVE 2. THE DESIGN EXCEPTION IMPROVES OPERATION OF THE PROPOSED INTERSECTION WHILE REDUCING R/W IMPACT AND PROJECT COST.

Curve Data - 3
 P.I. Sta. = 103+30.65 "Frontage"
 $\Delta = 53^{\circ}48'35"$ Rt.
 R = 273.00 Ft.
 T = 138.53 Ft.
 L = 256.39 Ft.
 E = 33.14 Ft.
 SE = R.C.

END CONSTRUCTION
 PROJECT NO. 1800223
 P.O.T. STA. 14+84.52
 LINE "S-3-K"
 N: 183007.97
 E: 806151.38

END INCIDENTAL &
 BEGIN CONSTRUCTION
 PROJECT NO. 1800223
 P.O.C. STA. 103+60.00
 LINE "FRONTAGE"
 N: 182574.55
 E: 806215.56

END INCIDENTAL
 CONSTRUCTION
 PROJECT NO. 1800223
 P.O.T. STA. 15+34.52
 LINE "S-3-K"
 N: 183057.96
 E: 806151.86

Sec. 24, T-2-S, R-11-W
 Patoka Township
 Gibson County

Notes:
 Topo Notes for this Sheet are Called Off of Line "S-3-K"
 All R/W On This Sheet Is Described Off of Line "S-3-K" Unless Otherwise Shown

Existing Roadway Removal

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTD	DRAWN: MTD	
CHECKED: KKP	CHECKED: KKP	

INDIANA
 DEPARTMENT OF TRANSPORTATION

ROADWAY PLAN SHEET
 C.R. 100 WEST / SOUTH 100 WEST
 LINE "S-3-K" AND "FRONTAGE"

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800223
SURVEY BOOK	SHEETS
ELECTRONIC	16 of 70
CONTRACT	PROJECT
8-41494	1800223

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix C: Early Coordination



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

Eric Holcomb, Governor
Joe McGuinness, Commissioner

October 16, 2020

Christie Stanifer
Environmental Coordinator
Indiana Department of Natural Resources
402 West Washington St. Room W273
Indianapolis, IN 46204

Sample Early
Coordination Letter

Re: Des. No.: 1800223, US 41 at Country Road (CR) 100 W. Intersection Project, 0.7 Mile South of the US 41/CR 150 S. Intersection in Gibson County, Indiana

Dear Ms. Stanifer:

The Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA) intends to proceed with a project involving the intersection at US 41 and CR 100 W. in Gibson County, Indiana. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. **Please use the above designation numbers and description in your reply.** We will incorporate your comments into a study of the project's environmental impacts.

Project Location: This project is located at US 41 and CR 100 W., 0.7 Mile South of the US 41/CR 150 S. intersection in Gibson County, Indiana. More specifically, the project is located in Section 24, Township 2 South, Range 11 West in Patoka Township.

Existing Conditions: The existing intersection is a signalized intersection with two lanes in each direction on US 41, one lane in each direction on CR 100 W., and one lane in each direction on S. 100 W. US 41 is classified as a principal arterial road. North of US 41, CR 100 W. is classified as a major collector. West of US 41, CR 100 W. is classified as a local road. S. 100 W. is classified as a local road. Left turns from US 41 are protected. CR 100 W. is served with a single phase. There are high crash occurrences at the intersection of US 41 and CR 100 W., with 32 crashes occurring over a 4.5 year period. The majority of the crashes are rear ends or right-angle crashes.

Purpose and Need: The need for this project is due to frequency of crashes occurring at this intersection, as documented in the US 41 Intersection Analysis dated April 22, 2020. The purpose of this project is to improve operation, mobility, and safety at the intersection.

Proposed Project: Project activities will include the reconstruction of the existing signalized intersection and realigning CR 100 W. and S. 100 W.. The new intersection will be an unsignalized Restricted Crossing U-Turn (RCUT). Sections of the existing roadway will be removed and turning lanes in each direction will be constructed. New spot lighting at the intersection and median U-turns will be provided.

Right-of-Way (ROW): Approximately 0.05 acre of temporary ROW and 0.93 acre of permanent ROW will be required.

Maintenance of Traffic (MOT): MOT will utilize phased construction consisting of single lane and shoulder closures along US 41. CR 100 W traffic will be maintained on existing CR 100 W. with no lane closures required. At this time, a detour and/or temporary signal is not anticipated to be required for this project.

Surrounding Resources: Land use in the vicinity of the project is primarily agricultural, commercial, and residential. The INDOT Environmental Services Division (ESD) Ecology & Waterway Permitting Office (EWPO) will perform waters and wetlands determinations and a biological assessment to identify any ecological resources that may be present. The project is not located within a wellhead protection area. There are no county regulated drains mapped within the project area.

This project qualifies for the application of the USFWS range-wide programmatic informal consultation for the Indiana bat and northern long-eared bat and project information will be submitted through USFWS's Information for Planning and Consultation (IPaC) separately. A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. A field visit conducted on July 13, 2020 did not find evidence of bats or birds in any of the small structures within the project area.

Comments Request: You are asked to review this information and provide any comments you may have relative to the anticipated effects of the project on areas which you have jurisdiction or special expertise. Please send your comments to Caroline Tegeler, of HNTB Corporation, at ctegeler@hntb.com or (317)917-5352. Should we not receive your response within thirty (30) calendar days from the date of this letter, it will be assumed that your agency feels that there will be no adverse effects incurred as a result of the proposed project. However, should you find that an extension to the response time is necessary, a reasonable amount may be granted upon request.

If you have any questions regarding this matter, please feel free to contact Caroline Tegeler, of HNTB Corporation, at ctegeler@HNTB.com or (317)917-5352; or Aubrey Howder, INDOT Project Manager, at Ahowder@indot.in.gov or (812)895-7309. Thank you in advance for your input.

HNTB CORPORATION



Caroline Tegeler

Attachments: Figure 1: Project Location Map
Figure 2: Project Aerial Map
Figure 3: Princeton Topographic Quadrangle Map
Photo Location Map
Project Location Photographs

Attachments have been removed to avoid duplication. Attachments can be found in Appendix B.

Cc:

Indiana Geological Survey, via webform
Indiana Department of Environmental Management, via webform
Brian Royer, Indiana Department of Transportation Division of Oil and Gas
Ryan Falls, INDOT Environmental Services Division
Christie Stanifer, Indiana Department of Natural Resources
Rick Neilson, Natural Resources Conservation Service
Greg McKay, USACE Environmental Analysis Branch – Louisville District
Kari Carmany-George, Federal Highway Administration
Robin McWilliams-Munson, US Fish and Wildlife Service
Steve Weinzapfel, Indiana Department of Natural Resources, Division of Reclamation
Michael Jett, Indiana Department, Utilities and Railroad
Tabitha Anthis, Gibson County Soil and Water Conservation District

Scott Martin, Gibson County Surveyor
Timothy Bottoms, Gibson County Sheriff
Chuck Lewis, Gibson County Highway Department
Greg Wright, City of Princeton Mayor
Jay Riley, Gibson County Council
Brian Harmon, North Gibson School Corporation
Terry Hedges, Gibson County Emergency Management
Gerald Bledose, Gibson County Board of Commissioners
Seyed Shokouhzadeh, Evansville Metropolitan Planning Organization
Aubrey Howder, INDOT Vincennes District, Project Manager
Jonathon Oakley, HNTB Corporation

Caroline Tegeler

From: Falls, Ryan G <RFalls@indot.IN.gov>
Sent: Monday, October 19, 2020 10:52 AM
To: Caroline Tegeler
Cc: Howder, Aubrey; Jonathan Oakley; Richard Connolly
Subject: RE: Vincennes Early Coordination Response - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)

Caroline Tegeler,

For future submissions for this project (and similar projects in the future), use a location termini that that is based off of another state route, not a county road. I understand one was not given in the scope, so it should read something like this, "US 41 at Country Road (CR) 100 W., # miles south of SR 64."

Thank you for the opportunity to respond to early coordination.

Ryan Falls

Capital Program Management-Senior Environmental Manager Supervisor

Indiana Department of Transportation
3650 South US Highway 41
Vincennes, IN 47591

Email: rfalls@indot.IN.gov

Cell: 812-582-1387

Office: 812-895-7326



From: Caroline Tegeler <ctegeler@HNTB.com>
Sent: Friday, October 16, 2020 2:00 PM
To: Falls, Ryan G <RFalls@indot.IN.gov>
Cc: Howder, Aubrey <AHowder@indot.IN.gov>; Jonathan Oakley <joakley@HNTB.com>; Richard Connolly <rconnolly@HNTB.com>
Subject: Early Coordination Letter - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)

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Dear Mr. Falls,

Please see the attached early coordination letter and supporting graphics for the US 41 and CR 100 W. Intersection Improvement project (Des. No. 1800223). If you have any questions regarding this project, please feel free to contact me by phone or email.

Thank you,

Caroline Tegeler

Scientist

Tel (317)917-5352 Cell (765)212-4983 Email ctegeler@hntb.com

Caroline Tegeler

From: McWilliams, Robin <robin_mcwilliams@fws.gov>
Sent: Monday, October 26, 2020 12:19 PM
To: Caroline Tegeler
Subject: Re: [EXTERNAL] Early Coordination Letter - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)

Dear Caroline,

This responds to your recent letter requesting our comments on the aforementioned project.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

The project is within the range of the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) and should follow the new Indiana bat/northern long-eared bat programmatic consultation process, if applicable (i.e. a federal transportation nexus is established). The Service has 14 days after a "Not Likely to Adversely Affect" determination letter is generated to review the project and provide additional comments or request additional information; if you do not receive a response from us within 14 days, we have no additional comments.

Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no other comments on the project as currently proposed. However, should new information arise pertaining to project plans or a revised species list be published, it will be necessary for the Federal agency to reinstate consultation. Standard recommendations are provided below.

We appreciate the opportunity to comment at this early stage of project planning. If you have any questions about our recommendations, please call (812) 334-4261 x. 207.

Sincerely,
Robin McWilliams Munson

Standard Recommendations:

1. Do not clear trees or understory vegetation outside the construction zone boundaries. **(This restriction is not related to the "tree clearing" restriction for potential Indiana Bat habitat.)**
2. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an open-bottom culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community.
3. Restrict channel work and vegetation clearing to the minimum necessary for installation of the stream crossing structure.

4. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.
5. Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion will be vegetated following INDOT's standard specifications.
6. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams.
7. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing

Robin McWilliams Munson
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 46142
812-334-4261

Mon-Tues 8-3:30p
Wed-Thurs 8:30-3p Telework

From: Caroline Tegeler <ctegeler@HNTB.com>
Sent: Friday, October 16, 2020 1:57 PM
To: McWilliams, Robin <robin_mcwilliams@fws.gov>
Subject: [EXTERNAL] Early Coordination Letter - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Dear Ms. McWilliams-Munson,

Please see the attached early coordination letter and supporting graphics for the US 41 and CR 100 W. Intersection Improvement project (Des. No. 1800223). If you have any questions regarding this project, please feel free to contact me by phone or email.

Thank you,

Caroline Tegeler
Scientist
Tel (317)917-5352 Cell (765)212-4983 Email ctegeler@hntb.com

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111 Monument Circle, Suite 1200 | Indianapolis, IN 46204 | hntb.com

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November 12, 2020

Caroline Tegeler
HNTB Corporation
111 Monument Circle, Suite 1200
Indianapolis, Indiana 46204

Dear Ms. Tegeler:

The proposed project to make intersection improvements along US 41 at County Road 100 West in Gibson County, Indiana, (Des No 1800223), as referred to in your letter received October 16, 2020, will cause a conversion of prime farmland.

The attached packet of information is for your use completing Parts VI and VII of the AD-1106. After completion, the federal funding agency needs to forward one copy to NRCS for our records.

If you need additional information, please contact John Allen at 317-295-5859.

Sincerely,

RICK NEILSON
State Soil Scientist

Enclosures

Helping People Help the Land.



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FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 2/16/2021			
Name of Project DES1800223 US41 CR100W		Federal Agency Involved FHWA			
Proposed Land Use Intersection Modification		County and State Gibson County, Indiana			
PART II (To be completed by NRCS)		Date Request Received By NRCS 10/16/2020		Person Completing Form: JRA	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size 430 ac
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 285330 % 89	Amount of Farmland As Defined in FPPA Acres: 211770 % 66			
Name of Land Evaluation System Used LESA	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 11/12/2020			
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		0.66			
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site		0.66			
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		0.66			
B. Total Acres Statewide Important or Local Important Farmland		0.00			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		<0.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		23			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		76			
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)	11		
2. Perimeter In Non-urban Use		(10)	7		
3. Percent Of Site Being Farmed		(20)	5		
4. Protection Provided By State and Local Government		(20)	0		
5. Distance From Urban Built-up Area		(15)	10		
6. Distance To Urban Support Services		(15)	10		
7. Size Of Present Farm Unit Compared To Average		(10)	1		
8. Creation Of Non-farmable Farmland		(10)	1		
9. Availability Of Farm Support Services		(5)	5		
10. On-Farm Investments		(20)	5		
11. Effects Of Conversion On Farm Support Services		(10)	0		
12. Compatibility With Existing Agricultural Use		(10)	0		
TOTAL SITE ASSESSMENT POINTS		160	55	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	76	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	55	0	0
TOTAL POINTS (Total of above 2 lines)		260	131	0	0
Site Selected: Site A		Date Of Selection 2/16/2021		Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Reason For Selection: Site A is the only alternative that meets the purpose and need.					
Name of Federal agency representative completing this form: Caroline Tegeler					Date: 2/16/2021

(See Instructions on reverse side)

Form AD-1006 (03-02)

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-23145

Request Received: October 16, 2020

Requestor: HNTB Corporation
Caroline Tegeler
111 Monument Circle, Suite 1200
Indianapolis, IN 46204-5178

Project: US 41 and CR 100 West intersection reconstruction and realignment, about 0.7 mile south of CR 150 South; Des #1800223

County/Site info: Gibson

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

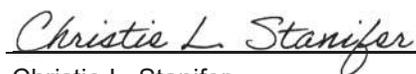
Regulatory Assessment: Formal approval by the Department of Natural Resources under the regulatory programs administered by the Division of Water is not required for this project.

Natural Heritage Database: The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.

Fish & Wildlife Comments: The measures below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion; low endophyte tall fescue may be used in the ditch bottom and side slopes only.
2. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
3. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.



Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife

Date: November 13, 2020

Caroline Tegeler

From: Royer, Brian <BRoyer@dnr.IN.gov>
Sent: Friday, November 20, 2020 8:23 AM
To: Caroline Tegeler
Subject: RE: Early Coordination Letter - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)

There are no oil and gas related wells within this project area and the only well that is close has been properly plugged and abandoned.

Thanks,

Brian Royer
Orphan Well Manager
Indiana Department of Natural Resources
Division of Oil & Gas
Cell- 317-417-6556
www.dnr.IN.gov

** Please let us know about the quality of our service by taking this brief [customer survey](#).*

From: Caroline Tegeler <ctegeler@HNTB.com>
Sent: Friday, October 16, 2020 1:30 PM
To: Royer, Brian <BRoyer@dnr.IN.gov>
Subject: Early Coordination Letter - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)

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Dear Mr. Royer,

Please see the attached early coordination letter and supporting graphics for the US 41 and CR 100 W. Intersection Improvement project (Des. No. 1800223). If you have any questions regarding this project, please feel free to contact me by phone or email.

Thank you,

Caroline Tegeler
Scientist
Tel (317)917-5352 Cell (765)212-4983 Email ctegeler@hntb.com

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Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 North Senate Avenue - Indianapolis, IN 46204
(800) 451-6027 - (317) 232-8603 - www.idem.IN.gov

INDOT
Aubrey Howder
3650 Old US Hwy 41
Vincennes, IN 47591

HNTB Corporation
Caroline Tegeler
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

Date

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: The Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA) intends to proceed with a project involving the intersection at US 41 and CR 100 W. in Gibson County, Indiana. Project activities will include the reconstruction of the existing signalized intersection and realigning CR 100 W. The new intersection will be a Reduced Conflict Intersection (RCI). Northbound and southbound traffic on US 41 will be directed to median U-turns. A raised concrete curb median will be installed to deter north-south traffic from crossing the existing intersection, while allowing for left turns from US 41. The CR 100 West approaches to the intersection with US 41 will be reconstructed and realigned to accommodate the RCI intersection.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

For additional information on specific roadway-related topics of interest, please visit the appropriate Web pages cited below, many of which provide contact information for persons within the various program areas who can answer questions not fully addressed in this letter. Also please be mindful that some environmental requirements may be subject to change and so each person intending to include a copy of this letter in their project documentation packet is advised to download the most recently revised version of the letter, found at: <http://www.in.gov/idem/5283.htm> (<http://www.in.gov/idem/5283.htm>).

To ensure that all environmentally-related issues are adequately addressed, IDEM recommends that you read this letter in its entirety, and consider each of the following issues as you move forward with the planning of your proposed roadway construction, reconstruction, or improvement project:

WATER AND BIOTIC QUALITY

1. Section 404 of the Clean Water Act requires that you obtain a permit from the U.S. Army Corps of Engineers (USACE) before discharging dredged or fill materials into any wetlands or other waters, such as rivers, lakes, streams, and ditches. Other activities regulated include the relocation, channelization, widening, or other such alteration of a stream, and the mechanical clearing (use of heavy construction equipment) of

- IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
- IC 14-29-4 Construction of Channels Act No related code

For information on these Indiana (statutory) Code and Indiana Administrative Code citations, see the DNR Web site at: <http://www.in.gov/dnr/water/9451.htm> (<http://www.in.gov/dnr/water/9451.htm>) . Contact the DNR Division of Water at 317-232-4160 for further information.

The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.

6. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of one (1), or more, acres of total land area, contact the Office of Water Quality – Watershed Planning Branch (317/233-1864) regarding the need for of a Rule 5 Storm Water Runoff Permit. Visit the following Web page
 - <http://www.in.gov/idem/4902.htm> (<http://www.in.gov/idem/4902.htm>)

To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (<http://www.in.gov/idem/4917.htm#constreq> (<http://www.in.gov/idem/4917.htm#constreq>)), and as described in 327 IAC 15-5-6.5 (<http://www.in.gov/legislative/iac/T03270/A00150> [PDF] (<http://www.in.gov/legislative/iac/T03270/A00150.PDF>), pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (<http://www.in.gov/isda/soil/contacts/map.html> (<http://www.in.gov/isda/soil/contacts/map.html>)).

Upon receipt of the construction plan, personnel of the SWCD or the Indiana Department of Environmental Management will review the plan to determine if it meets the requirements of 327 IAC 15-5. Plans that are deemed deficient will require re-submittal. If the plan is sufficient you will be notified and instructed to submit the verification to IDEM as part of the Rule 5 Notice of Intent (NOI) submittal. Once construction begins, staff of the SWCD or Indiana Department of Environmental Management will perform inspections of activities at the site for compliance with the regulation.

Please be mindful that approximately 149 Municipal Separate Storm Sewer System (MS4) areas are now being established by various local governmental entities throughout the state as part of the implementation of Phase II federal storm water requirements. All of these MS4 areas will eventually take responsibility for Construction Plan review, inspection, and enforcement. As these MS4 areas obtain program approval from IDEM, they will be added to a list of MS4 areas posted on the IDEM Website at: <http://www.in.gov/idem/4900.htm> (<http://www.in.gov/idem/4900.htm>).

If your project is located in an IDEM-approved MS4 area, please contact the local MS4 program about meeting their storm water requirements. Once the MS4 approves the plan, the NOI can be submitted to IDEM.

Regardless of the size of your project, or which agency you work with to meet storm water requirements, IDEM recommends that appropriate structures and techniques be utilized both during the construction phase, and after completion of the project, to minimize the impacts associated with storm water runoff. The use of appropriate planning and site development and appropriate storm water quality measures are recommended to prevent soil from leaving the construction site during active land disturbance and for post construction water quality concerns. Information and assistance regarding storm water related to

The U.S. EPA further recommends that all homes (and apartments within three stories of ground level) be tested for radon. If in-home radon levels are determined to be 4 pCi/L, or higher, EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L, or higher, EPA recommends the installation of radon-reduction measures. (For a list of qualified radon testers and radon mitigation (or reduction) specialists visit: http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf (http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf.) It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels.

To learn more about radon, radon risks, and ways to reduce exposure visit:

<http://www.in.gov/isdh/regsvcs/radhealth/radon.htm> (<http://www.in.gov/isdh/regsvcs/radhealth/radon.htm>), <http://www.in.gov/idem/4145.htm> (<http://www.in.gov/idem/4145.htm>), or <http://www.epa.gov/radon/index.html> (<http://www.epa.gov/radon/index.html>).

3. With respect to asbestos removal: all facilities slated for renovation or demolition (except residential buildings that have (4) four or fewer dwelling units and which will not be used for commercial purposes) must be inspected by an Indiana-licensed asbestos inspector prior to the commencement of any renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, any subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements.

If no asbestos is found where a renovation activity will occur, or if the renovation involves removal of less than 260 linear feet of RACM off of pipes, less than 160 square feet of RACM off of other facility components, or less than 35 cubic feet of RACM off of all facility components, the owner or operator of the project does not need to notify IDEM before beginning the renovation activity.

For questions on asbestos demolition and renovation activities, you can also call IDEM's Lead/Asbestos section at 1-888-574-8150.

However, in all cases where a demolition activity will occur (even if no asbestos is found), the owner or operator must still notify IDEM 10 working days prior to the demolition, using the form found at <http://www.in.gov/icpr/webfile/formsdiv/44593.pdf> (<http://www.in.gov/icpr/webfile/formsdiv/44593.pdf>).

Anyone submitting a renovation/demolition notification form will be billed a notification fee based upon the amount of friable asbestos containing material to be removed or demolished. Projects that involve the removal of more than 2,600 linear feet of friable asbestos containing materials on pipes, or 1,600 square feet or 400 cubic feet of friable asbestos containing material on other facility components, will be billed a fee of \$150 per project; projects below these amounts will be billed a fee of \$50 per project. All notification remitters will be billed on a quarterly basis.

For more information about IDEM policy regarding asbestos removal and disposal, visit: <http://www.in.gov/idem/4983.htm> (<http://www.in.gov/idem/4983.htm>).

4. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978, or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: <http://www.in.gov/isdh/19131.htm> (<http://www.in.gov/isdh/19131.htm>).

Should the scope of the proposed project be expanded to the extent that a National Environmental Policy Act Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, IDEM will actively participate in any early interagency coordination review of the project.

Meanwhile, please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of the Indiana Department of Environmental Management regarding any project for which a copy of this letter is used. Also note that it is the responsibility of the project engineer or consultant using this letter to ensure that the most current draft of this document, which is located at <http://www.in.gov/idem/5284.htm> (<http://www.in.gov/idem/5284.htm>), is used.

Signature(s) of the Applicant

I acknowledge that the following proposed roadway project will be financed in part, or in whole, by public monies.

Project Description

The Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA) intends to proceed with a project involving the intersection at US 41 and CR 100 W. in Gibson County, Indiana. Project activities will include the reconstruction of the existing signalized intersection and realigning CR 100 W. The new intersection will be a Reduced Conflict Intersection (RCI). Northbound and southbound traffic on US 41 will be directed to median U-turns. A raised concrete curb median will be installed to deter north-south traffic from crossing the existing intersection, while allowing for left turns from US 41. The CR 100 West approaches to the intersection with US 41 will be reconstructed and realigned to accommodate the RCI intersection.

With my signature, I do hereby affirm that I have read the letter from the Indiana Department of Environment that appears directly above. In addition, I understand that in order to complete that project in which I am interested, with a minimum of impact to the environment, I must consider all the issues addressed in the aforementioned letter, and further, that I must obtain any required permits.

Date: 3/26/2021

Signature of the INDOT
Project Engineer or Other Responsible Agent Aubrey Howder
Aubrey Howder

Date: 3/16/2021

Signature of the
For Hire Consultant Caroline Tegeler
Caroline Tegeler

Organization and Project Information

Project ID:
Des. ID: 1800223
Project Title: US 41 at CR 100 W. Intersection Improvement
Name of Organization: HNTB Corporation
Requested by: Caroline Tegeler

Environmental Assessment Report

1. Geological Hazards:
 - Potential Mine Subsidence ([CMIS](#))
 - High liquefaction potential
2. Mineral Resources:
 - Bedrock Resource: Low Potential
 - Sand and Gravel Resource: Low Potential
3. Active or abandoned mineral resources extraction sites:
 - Petroleum Exploration Wells
 - Underground Coal Mines

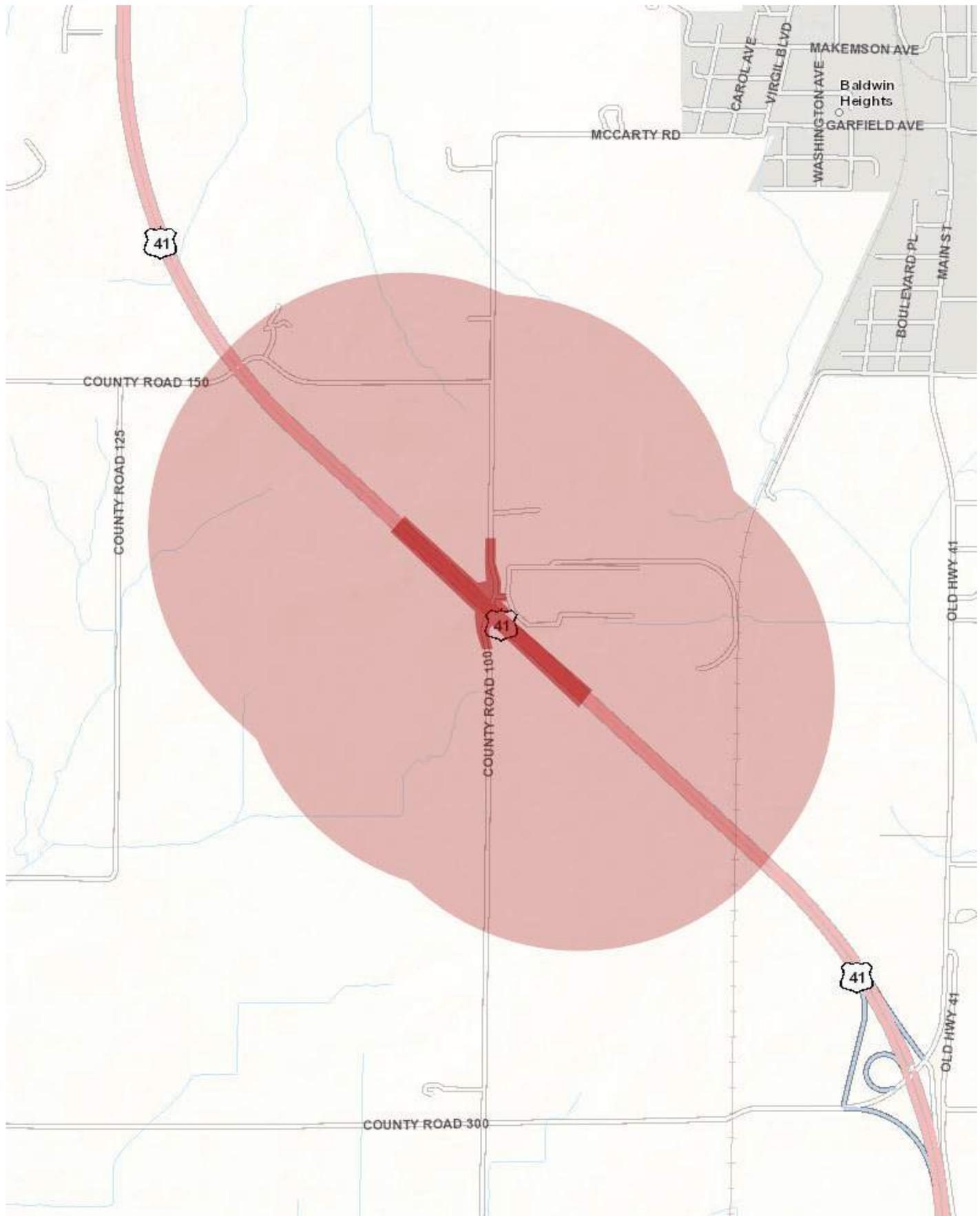
*All map layers from Indiana Map (maps.indiana.edu)

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This information was furnished by Indiana Geological Survey
Address: 420 N. Walnut St., Bloomington, IN 47404
Email: IGSEnvir@indiana.edu
Phone: 812 855-7428

Date: March 17, 2021





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

In Reply Refer To:

October 06, 2020

Consultation Code: 03E12000-2020-SLI-1846

Event Code: 03E12000-2021-E-00096

Project Name: US 41 and CR 100 W Intersection Improvement Des. No. 1800223

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions which will help you

determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html> to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

(812) 334-4261

Project Summary

Consultation Code: 03E12000-2020-SLI-1846

Event Code: 03E12000-2021-E-00096

Project Name: US 41 and CR 100 W Intersection Improvement Des. No. 1800223

Project Type: TRANSPORTATION

Project Description: The Indiana Department of Transportation (INDOT) and the Federal Highway Administration (FHWA) intend to proceed with a project involving the intersection of US 41 and CR 100 W in Gibson County. More specifically, the project is located in Section 25, Township 2 South, Range 11 West in Patoka Township, Princeton, Indiana.

Proposed work along US 41 includes modifying the existing intersection at CR 100 W to a Reduced Conflict Intersection (RCI), which includes extending the existing turn lanes, providing median U-turns, and providing slotted left turns at the intersection with CR 100 W. The southeast J-Turn is located 1834 feet from the intersection, and the northwest J-Turn is located 1960 feet from the intersection. Proposed work along CR 100 W includes realigning the roadway to improve operation, mobility, and safety.

Multiple large trees suitable for roosting by both the Indiana bat and the Northern Long-eared bat are present along US 41. No tree clearing is anticipated. Noise levels are not anticipated to become elevated above existing levels. The project involves permanent and temporary lighting. A query of the USFWS Bat Database by INDOT Vincennes District staff conducted on June 12, 2020 did not identify any documented Indiana bat or Northern Long-eared bat sites within 0.5 mile of the project area. An inquiry using the USFWS Information for Planning and Consultation (IPaC) website confirmed the project is located in the range of the Indiana bat and Northern Long-eared bat. The project is outside of the identified critical habitat for these species. Construction is anticipated to take place during spring, summer, and fall of both 2023 and 2024.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.32671393513465N87.5847856469584W>



Counties: Gibson, IN

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/1/office/31440.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Incidental take of the NLEB is not prohibited here. Federal agencies may consult using the 4(d) rule streamlined process. Transportation projects may consult using the programmatic process. See www.fws.gov/midwest/endangered/mammals/nleb/index.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Shampayne Jeffries

From: Falls, Ryan G <RFalls@indot.IN.gov>
Sent: Friday, June 12, 2020 7:50 AM
To: Shampayne Jeffries; Wright, Kristy
Subject: RE: US 41 and CR 100 Intersection Improvement, Des. No. 1800223, Bat Check - negative

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The range - wide programmatic consultation for the Indiana Bat and Northern Long - eared Bat will be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

Ryan Falls

Capital Program Management-Senior Environmental Manager Supervisor

Indiana Department of Transportation
3650 South US Highway 41
Vincennes, IN 47591

Office: 812-895-7326

Cell: 812-582-1387

Email: rfalls@indot.IN.gov



From: Shampayne Jeffries <sjeffries@HNTB.com>
Sent: Thursday, June 11, 2020 3:23 PM
To: Falls, Ryan G <RFalls@indot.IN.gov>; Wright, Kristy <KWright@indot.IN.gov>
Subject: US 41 and CR 100 Intersection Improvement, Des. No. 1800223, Bat Check

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Good morning Mr. Falls and Ms. Wright,

I would like to request the query of the USFWS Bat Database for inclusion in the environmental documentation for Des. No. 1800223– US 41 and CR 100 Intersection Improvement. The project is in Gibson County. The proposed intersection improvement will include modifying the existing intersection at C.R. 100 W to a Reduced Conflict Intersection (RCI), which includes extending the existing turn lanes, providing median U-turns, and providing slotted left turns at the intersection with C.R. 100 W. Proposed work along C.R. 100 W includes realigning the roadway to improve operation, mobility, and safety. Attached are figures depicting the location of the project. Please let me know if you have any questions or require additional information.

Shampayne Jeffries

Environmental Planning Intern
Environmental Planning

Tel (317) 636-4682 Direct (317) 222-6589 Email sjeffries@hntb.com

HNTB CORPORATION

111 Monument Circle, Suite 1200, Indianapolis, Indiana 46204 | www.hntb.com



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

In Reply Refer To:

October 08, 2020

Consultation Code: 03E12000-2020-I-1846

Event Code: 03E12000-2021-E-00135

Project Name: US 41 and CR 100 W Intersection Improvement Des. No. 1800223

Subject: Concurrence verification letter for the 'US 41 and CR 100 W Intersection Improvement Des. No. 1800223' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **US 41 and CR 100 W Intersection Improvement Des. No. 1800223** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

US 41 and CR 100 W Intersection Improvement Des. No. 1800223

Description

The Indiana Department of Transportation (INDOT) and the Federal Highway Administration (FHWA) intend to proceed with a project involving the intersection of US 41 and CR 100 W in Gibson County. More specifically, the project is located in Section 25, Township 2 South, Range 11 West in Patoka Township, Princeton, Indiana.

Proposed work along US 41 includes modifying the existing intersection at CR 100 W to a Reduced Conflict Intersection (RCI), which includes extending the existing turn lanes, providing median U-turns, and providing slotted left turns at the intersection with CR 100 W. The southeast J-Turn is located 1834 feet from the intersection, and the northwest J-Turn is located 1960 feet from the intersection. Proposed work along CR 100 W includes realigning the roadway to improve operation, mobility, and safety.

Multiple large trees suitable for roosting by both the Indiana bat and the Northern Long-eared bat are present along US 41. No tree clearing is anticipated. Noise levels are not anticipated to become elevated above existing levels. The project involves permanent and temporary lighting. A query of the USFWS Bat Database by INDOT Vincennes District staff conducted on June 12, 2020 did not identify any documented Indiana bat or Northern Long-eared bat sites within 0.5 mile of the project area. An inquiry using the USFWS Information for Planning and Consultation (IPaC) website confirmed the project is located in the range of the Indiana bat and Northern Long-eared bat. The project is outside of the identified critical habitat for these species. Construction is anticipated to take place during spring, summer, and fall of both 2023 and 2024.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the threatened Northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat^[1]?

[1] See [Indiana bat species profile](#)

Automatically answered

Yes

2. Is the project within the range of the Northern long-eared bat^[1]?

[1] See [Northern long-eared bat species profile](#)

Automatically answered

Yes

3. Which Federal Agency is the lead for the action?

A) *Federal Highway Administration (FHWA)*

4. Are *all* project activities limited to non-construction^[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

[1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces^[1]?

[1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum^[1]?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

7. Is the project located **within** a karst area?

No

8. Is there *any* suitable^[1] summer habitat for Indiana Bat or NLEB **within** the project action area^[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the [national consultation FAQs](#).

Yes

9. Will the project remove *any* suitable summer habitat^[1] and/or remove/trim any existing trees **within** suitable summer habitat?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

No

10. Does the project include activities **within documented Indiana bat habitat**^{[1][2]}?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry triangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

No

11. Does the project include activities **within documented NLEB habitat**^{[1][2]}?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

No

12. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

No

13. Does the project include slash pile burning?

No

14. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

No

15. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

No

16. Will the project involve the use of **temporary** lighting *during* the active season?

Yes

17. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **temporary** lighting will be used?

Yes

18. Will the project install new or replace existing **permanent** lighting?

Yes

19. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **permanent** lighting will be installed or replaced?

Yes

20. Does the project include percussives or other activities (**not including tree removal/trimming or bridge/structure work**) that will increase noise levels above existing traffic/background levels?

No

21. Are *all* project activities that are **not associated with** habitat removal, tree removal/trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

Yes

22. Will the project raise the road profile **above the tree canopy**?

No

23. Are the project activities that are not associated with habitat removal, tree removal/trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives consistent with a No Effect determination in this key?

Automatically answered

Yes, other project activities are limited to actions that DO NOT cause any additional stressors to the bat species as described in the BA/BO

24. **General AMM 1**

Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

Yes

25. **Lighting AMM 1**

Will *all* **temporary** lighting be directed away from suitable habitat during the active season?

Yes

26. Lighting AMM 2

Does the lead agency use the BUG (Backlight, Uplight, and Glare) system developed by the Illuminating Engineering Society^{[1][2]} to rate the amount of light emitted in unwanted directions?

[1] Refer to [Fundamentals of Lighting - BUG Ratings](#)

[2] Refer to [The BUG System—A New Way To Control Stray Light](#)

Yes

27. Lighting AMM 2

Will the **permanent** lighting be designed to be as close to 0 for all three BUG ratings as possible, with a priority of "uplight" of 0 and "backlight" as low as practicable?

Yes

Project Questionnaire

1. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

N/A

2. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

N/A

Avoidance And Minimization Measures (AMMs)

This determination key result includes the commitment to implement the following Avoidance and Minimization Measures (AMMs):

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

LIGHTING AMM 2

When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on December 02, 2019. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix D: Section 106 of the NHPA

Minor Projects PA Project Assessment Form

Date: 10/20/2020

Project Designation Number: 1800223

Route Number: US 41

Project Description: The Federal Highway Administration (FHWA) and Indiana Department of Transportation (INDOT)/Vincennes District plan to proceed with an intersection improvement project at the US 41 and County Road (CR) 100W intersection, in a rural portion of Gibson County, Indiana. The construction of a “J-Turn Intersection” is proposed. The proposed project location is 0.7 mile south of the US 41 and CR 150S intersection.

Approximately 0.86 acre of right-of-way (ROW) will be needed for this project.

Feature crossed (if applicable): N/A

City/Township: Patoka Township

County: Gibson County

Information reviewed (please check all that apply):

- General project location map USGS map Aerial photograph Interim Report
 Written description of project area General project area photos Soil survey data
 Previously completed historic property reports Previously completed archaeology reports
 Bridge Inspection Information SHAARD SHAARD GIS Streetview Imagery

Other (please specify): Project information submitted by HNTB Corp., on August 19, 2020 and on file with INDOT CRO; Gibson County GIS/property records, accessed here:

<https://beacon.schneidercorp.com/Application.aspx?AppID=114&LayerID=1283&PageTypeID=1&PageID=928>

Moffatt, David

2020 Archaeological Reconnaissance for the Proposed Intersection Improvement Project at the US 41 and CR 100 W Intersection, Patoka Township, Gibson County, Indiana (Des No 1800223). INDOT, CRO. Report on file at IDNR, DHPA.

Please specify all applicable categories and condition(s) (conditions that are applicable are highlighted):

B-2. Installation of new lighting, signals, signage and other traffic control devices under the following conditions [*BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied*]:

Condition A (Archaeological Resources)

One of the two conditions listed below must be met (EITHER Condition I or Condition ii must be satisfied):

- i. Work occurs in previously disturbed soils; OR
- ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and

Minor Projects PA Project Assessment Form

reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

Condition B (Above-Ground Resources)

Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

B-3. Construction of added travel, turning, or auxiliary lanes (e.g., bicycle, truck climbing, acceleration and deceleration lanes) and shoulder widening under the following conditions [***BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied***]:

Condition A (Archaeological Resources)

One of the two conditions listed below must be met (*EITHER Condition i or Condition ii must be satisfied*):

- i. Work occurs in previously disturbed soils; *OR*
- ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

Condition B (Above-Ground Resources)

Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

Are there any commitments associated with this project? If yes, please explain and include in the Additional Comments Section below. yes no

Does the project result in a de minimis impact to a Section 4(f) protected historic resource? If yes, please explain in the Additional Comments Section below. yes no

Additional Comments:

Above-ground Resources

An INDOT Cultural Resources Office (CRO) historian, who met the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61, first performed a desktop review, checking the Indiana Register of Historic Sites and Structures (State Register) and National Register of Historic Places (National Register) lists for Gibson County. No listed resources are present within 0.25 mile of the project area, a distance that would serve as an adequate area of potential effects (APE) given the scope of the project and the surrounding terrain.

The *Gibson County/Warrick County Interim Report* (1984; Patoka Township) of the Indiana Historic Sites and Structures Inventory (IHSSI) was consulted: Gibson County was re-surveyed in 2010. Data from the 2010 survey

Minor Projects PA Project Assessment Form

is only available in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the Indiana Historic Buildings, Bridges, and Cemeteries (IHBBC) map, as are the Nation Register records for the county. The information contained in these databases supersede the 1984 survey information/interim report hard-copies. No IHSSI sites are recorded within 0.25 mile of the proposed project.

Land surrounding the project area is rural with agricultural fields; modern (late 20th century) commercial/industrial development is present on the east and west sides of US 41 near the subject intersection. One above-ground property (that is or will be 50 years of age by proposed 2023 project letting) is present within 0.25 mile of the intersection of CR 100W and US 41. According to Gibson County property records the property (1885 S. CR 100W) was constructed c.-1970. The resource, a pyramidal-roofed, ranch-style dwelling, was not surveyed for or included in the 2010 Gibson County re-survey. The house lacks material integrity, having undergone the following physical alterations over time: **1)** Installation of modern synthetic exterior siding material; and **2)** Installation of modern replacement windows and front door. Ranch-style houses are common in Gibson County and in Indiana; therefore, the resource lacks both material integrity and historic significance. In 2020, the resource would not merit an IHSSI survey rating of “contributing.” No other above-ground resources that are or will be 50 years of age by the proposed 2023 project letting were recorded within 0.25 mile of the project location.

Based on the available information, as summarized above, no above-ground concerns exist as long as the project scope does not change.

Archaeological Resources

An INDOT, CRO archaeologist, who met the Secretary of the Interior’s Professional Qualification Standards as per 36 CFR Part 61 completes an archaeological records check and Phase Ia reconnaissance for the proposed project area. The records check found that there have been eight archaeological reconnaissance all completed, at least partially, within one mile of the project area. No archaeological sites were recorded for these projects. One archaeological site has been recorded within one mile of the project area, 12-Gi-584. This Archaic site was recorded for a database enhancement project based on information provided by a local archaeological enthusiast.

The archaeological field reconnaissance examined the project area through approximately 74 shovel test probes of the undisturbed areas. Soils in the agricultural fields were found to be deflated. No cultural materials were located and no additional archaeological investigation is recommended.

Accidental Discovery: If any archaeological artifacts or human remains are uncovered during construction, demolition, or earth moving activities, construction in the immediate area of the find will be stopped, and the INDOT Cultural Resources Office and the Division of Historic Preservation and Archaeology will be notified immediately.

INDOT Cultural Resources staff reviewer(s): Susan Branigin and David Moffatt

****Be sure to attach this form to the National Environmental Policy Act documentation for this project. Also, the NEPA documentation shall reference and include the description of the specific stipulation in the PA that qualifies the project as exempt from further Section 106 review.*

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix E: Red Flag and Hazardous Materials



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-5113
FAX: (317) 233-4929

**Eric Holcomb, Governor Joe
McGuinness, Commissioner**

Date: November 13, 2020

To: Site Assessment & Management (SAM)
Environmental Policy Office - Environmental Services Division (ESD)
Indiana Department of Transportation
100 N Senate Avenue, Room N642
Indianapolis, IN 46204

From: Shampayne Jeffries
HNTB Corporation
111 Monument Circle, Suite 1200
Indianapolis, IN 46204
sjeffries@hntb.com

Re: RED FLAG INVESTIGATION
DES # 1800223, State Project
Intersection Improvement
US 41 and CR 100 W
Gibson County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: This project is an intersection modification at U.S. 41 & C.R. 100 W, 0.7 mile south of the U.S. 41/C.R. 150 S intersection in Gibson County. Proposed work along U.S. 41 includes modifying the existing intersection at C.R. 100 W to a Reduced Conflict Intersection (RCI), which includes extending the existing turn lanes, providing median U-turns, and providing slotted left turns at the intersection with C.R. 100 W. Proposed work along C.R. 100 W includes realigning the roadway to improve operation, mobility, and safety. As part of the proposed project it is anticipated that excavation for relocation of roadside drainage will occur on the south side of US 41 at the western end of the project to a depth of 10 feet, on the north side of US 41 at the intersection to a depth of 8 feet, and on the north side of US 41 at the eastern end of the project to a depth of 3 feet. Utility coordination is on-going; however, it is anticipated that underground natural gas supply lines and above ground electric lines will require relocation.

Bridge and/or Culvert Work Included in Project: Yes No Structure #(s) _

If this is a bridge project, is the bridge Historical? Yes No , Select Non-Select

(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).

Proposed right of way: Temporary # Acres 0.05 , Permanent # Acres 0.93 , Not Applicable

Type of excavation: Excavation is required along the northwest side of existing CR 100 W for the realignment of CR 100. The maximum depth of excavation is approximately 13' with the limits of excavation extending approximately 300 linear feet along CR 100 W east of US 41. Minor excavation along US 41 is required at the median U-turns to reconstruct the existing roadside ditch. The maximum depth of excavation along US 41 is approximately 8' and extends approximately 200 linear feet.

Maintenance of traffic: Maintenance of traffic will utilize phased construction consisting of single lane and shoulder closures along US 41. CR 100 W traffic will be maintained on existing CR 100 W with no lane closures required. At this time, a detour and/or temporary signal is not anticipated to be required for this project.

Work in waterway: Yes No Below ordinary high water mark: Yes No

Any other factors influencing recommendations: N/A

INFRASTRUCTURE TABLE AND SUMMARY

Infrastructure			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Religious Facilities	N/A	Recreational Facilities	N/A
Airports ¹	N/A	Pipelines	N/A
Cemeteries	N/A	Railroads	1
Hospitals	N/A	Trails	N/A
Schools	N/A	Managed Lands	N/A

¹In order to complete the required airport review, a review of public airports within 3.8 miles (20,000 feet) is required.

Explanation:

Railroads: One (1) railroad is located within the 0.5 mile search radius. The railroad segment, CSX Railroad, is located approximately 0.39 mile east of the project area. No impact is expected.

WATER RESOURCES TABLE AND SUMMARY

Water Resources			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
NWI - Points	N/A	Canal Routes - Historic	N/A
Karst Springs	N/A	NWI - Wetlands	17
Canal Structures – Historic	N/A	Lakes	5
NPS NRI Listed	N/A	Floodplain - DFIRM	1
NWI-Lines	N/A	Cave Entrance Density	N/A
IDEM 303d Listed Streams and Lakes (Impaired)	4	Sinkhole Areas	N/A
Rivers and Streams	6	Sinking-Stream Basins	N/A

Explanation:

IDEM 303d Listed Streams and Lakes: Four (4) 303d Listed Streams are located within the 0.5 mile search radius. The nearest impaired stream, Pigeon Creek, is located approximately 0.12 mile southwest of the project area. No impact is expected.

Rivers and Streams: Six (6) rivers and stream segments are located within the 0.5 mile search radius. The nearest stream segment is located approximately 0.12 mile southwest of the project area. No impact is expected.

NWI-Wetlands: Seventeen (17) wetlands are located within the 0.5 mile search radius. One wetland is located adjacent to the project area. A Waters of the US Report will be prepared and coordination with INDOT ESD Ecology and Waterway Permitting will occur.

Lakes: Five (5) lakes are located within the 0.5 mile search radius. The nearest lake is located approximately 0.15 mile west of the project area. No impact is expected.

Floodplains: One (1) floodplain polygon is located within the 0.5 mile search radius. The nearest floodplain polygon is located approximately 0.45 mile north of the project area. No impact is expected.

URBANIZED AREA BOUNDARY SUMMARY

Urbanized Area Boundary (UAB): This project lies within the Princeton UAB; however, a Rule 13 Permit from IDEM has not been issued. No further coordination is necessary at this time.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Petroleum Wells	24	Mineral Resources	N/A
Mines – Surface	N/A	Mines – Underground	1

Explanation:

Petroleum Wells: Twenty-Four (24) petroleum wells are located within the 0.5 mile search radius. One (1) petroleum well is located adjacent to the project area. Coordination with Indiana Department of Natural Resources (IDNR) Oil and Gas Division will occur.

Mines – Surface and Mines – Underground: One (1) underground mine is located within the 0.5 mile search radius. The mine is located within the project area. Coordination with IDNR Reclamation Division will occur.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Superfund	N/A	Manufactured Gas Plant Sites	N/A
RCRA Generator/ TSD	N/A	Open Dump Waste Sites	N/A
RCRA Corrective Action Sites	N/A	Restricted Waste Sites	N/A
State Cleanup Sites	N/A	Waste Transfer Stations	N/A
Septage Waste Sites	N/A	Tire Waste Sites	N/A
Underground Storage Tank (UST) Sites	N/A	Confined Feeding Operations (CFO)	N/A
Voluntary Remediation Program	N/A	Brownfields	N/A
Construction Demolition Waste	N/A	Institutional Controls	N/A
Solid Waste Landfill	N/A	NPDES Facilities	2

Infectious/Medical Waste Sites	N/A	NPDES Pipe Locations	N/A
Leaking Underground Storage (LUST) Sites	N/A	Notice of Contamination Sites	N/A

Unless otherwise noted, site specific details presented in this section were obtained from documents reviewed on the Indiana Department of Environmental Management (IDEM) Virtual File Cabinet (VFC).

Explanation:

NPDES Facilities: Two (2) NPDES facility are located within the 0.5 mile search radius. The nearest location, Berry Plastics Corporation, is located adjacent to the project. The permit is currently in effect. Coordination with Berry Plastics Corporation should occur.

ECOLOGICAL INFORMATION SUMMARY

The Gibson County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high quality natural communities is attached with ETR species highlighted. A preliminary review of the Indiana Natural Heritage Database by INDOT Environmental Services did not indicate the presence of ETR species within the 0.5 mile search radius. Coordination with the US Fish and Wildlife Service (USFWS) and IDNR will occur.

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent “Using the USFWS’s IPaC System for Listed Bat Consultation for INDOT Projects.”

RECOMMENDATIONS SECTION

Include recommendations from each section. If there are no recommendations, please indicate N/A:

INFRASTRUCTURE: N/A

WATER RESOURCES:

The presence of the following water resource will require the preparation of a Waters of the US Report and coordination with INDOT ESD Ecology and Waterway Permitting:

One (1) wetland is located adjacent to the project area.

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION:

Petroleum Wells: One petroleum well is located adjacent to the project area. Coordination with IDNR Oil and Gas Division will occur.

Underground Mines: One mine-underground is located within the project area. Coordination with IDNR Reclamation Division will occur.

HAZARDOUS MATERIAL CONCERNS:

NPDES Facilities: Berry Plastics Corporation is located adjacent to the project. Coordination with Berry Plastics Corporation

should occur.

ECOLOGICAL INFORMATION: Coordination with USFWS and IDNR will occur. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

Nicole Fohey-
Breting

Digitally signed by
Nicole Fohey-Breting
Date: 2020.12.21
12:58:51 -05'00'

INDOT Environmental Services concurrence: _____ (Signature)

Prepared by:
Shampayne Jeffries
Environmental Planning Intern
HNTB

Graphics:

A map for each report section with a 0.5 mile search radius buffer around all project area(s) showing all items identified as possible items of concern is attached. If there is not a section map included, please change the YES to N/A:

SITE LOCATION: YES

INFRASTRUCTURE: YES

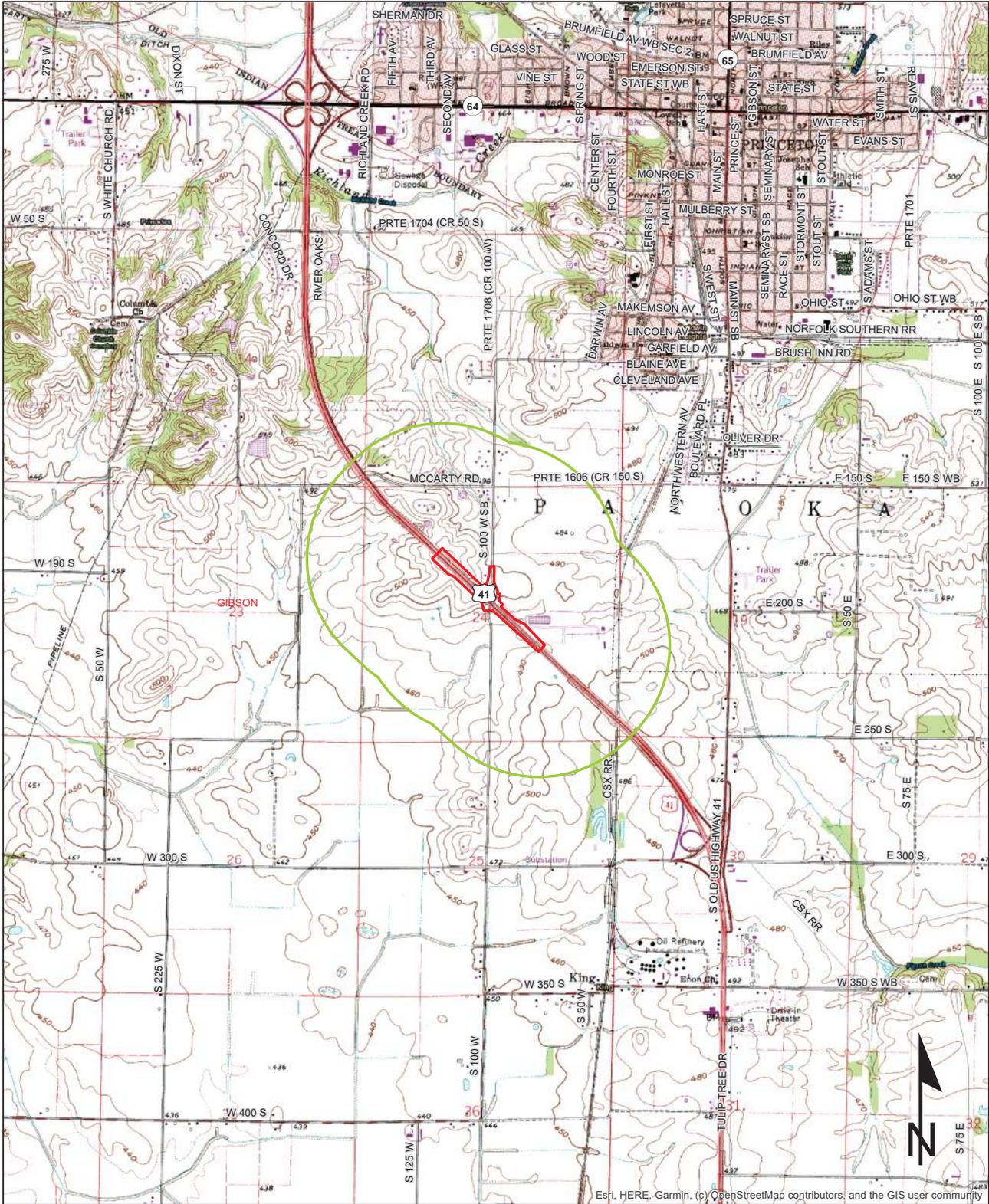
WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: YES

MINING/MINERAL EXPLORATION: YES

HAZARDOUS MATERIAL CONCERNS: YES

Red Flag Investigation - Site Location
 US 41 and CR 100 W
 Des. No. 1800223, Intersection Improvement
 Gibson County, Indiana

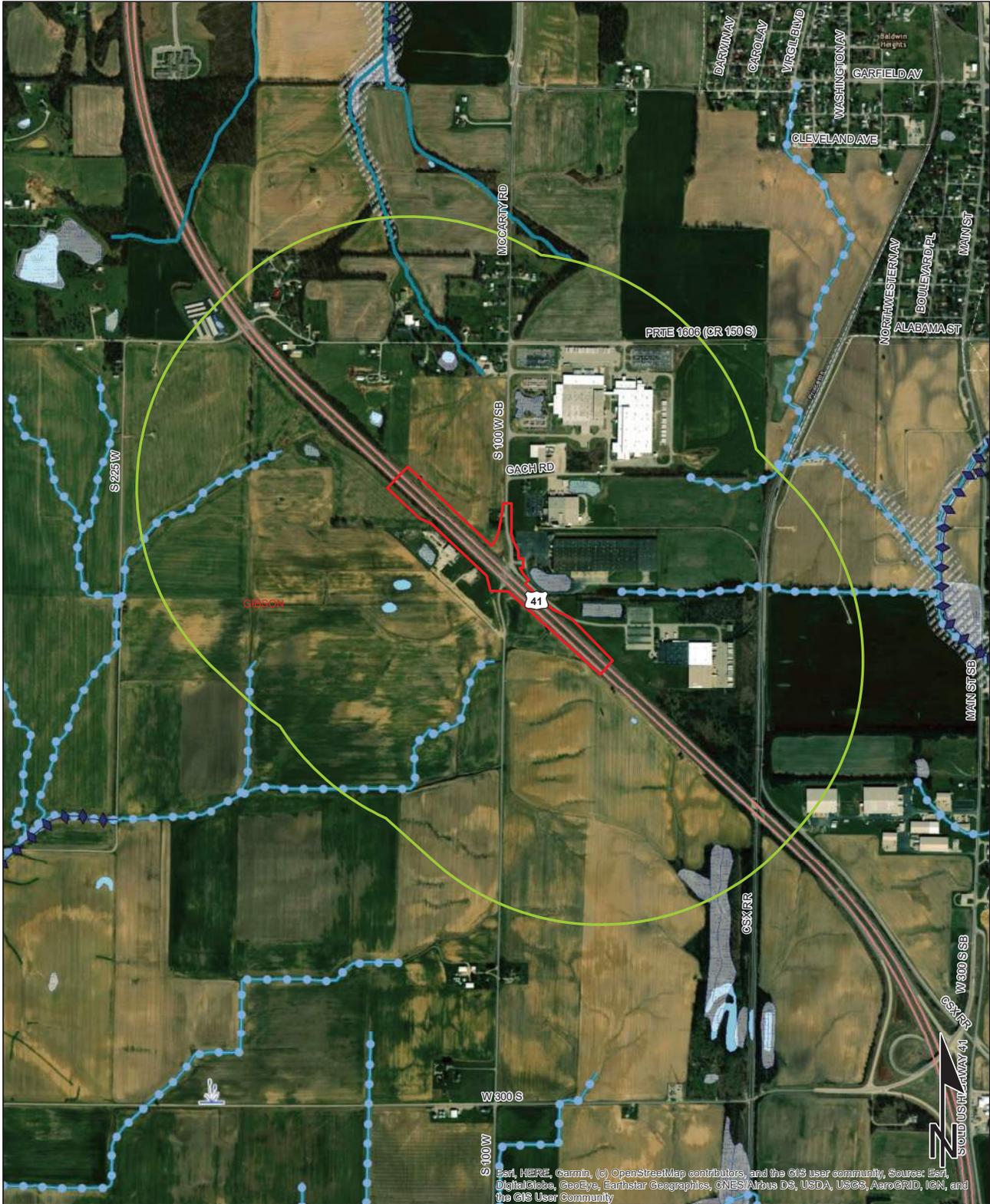


Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Sources: 0.5 0.25 0 0.5 Miles
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83
 This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

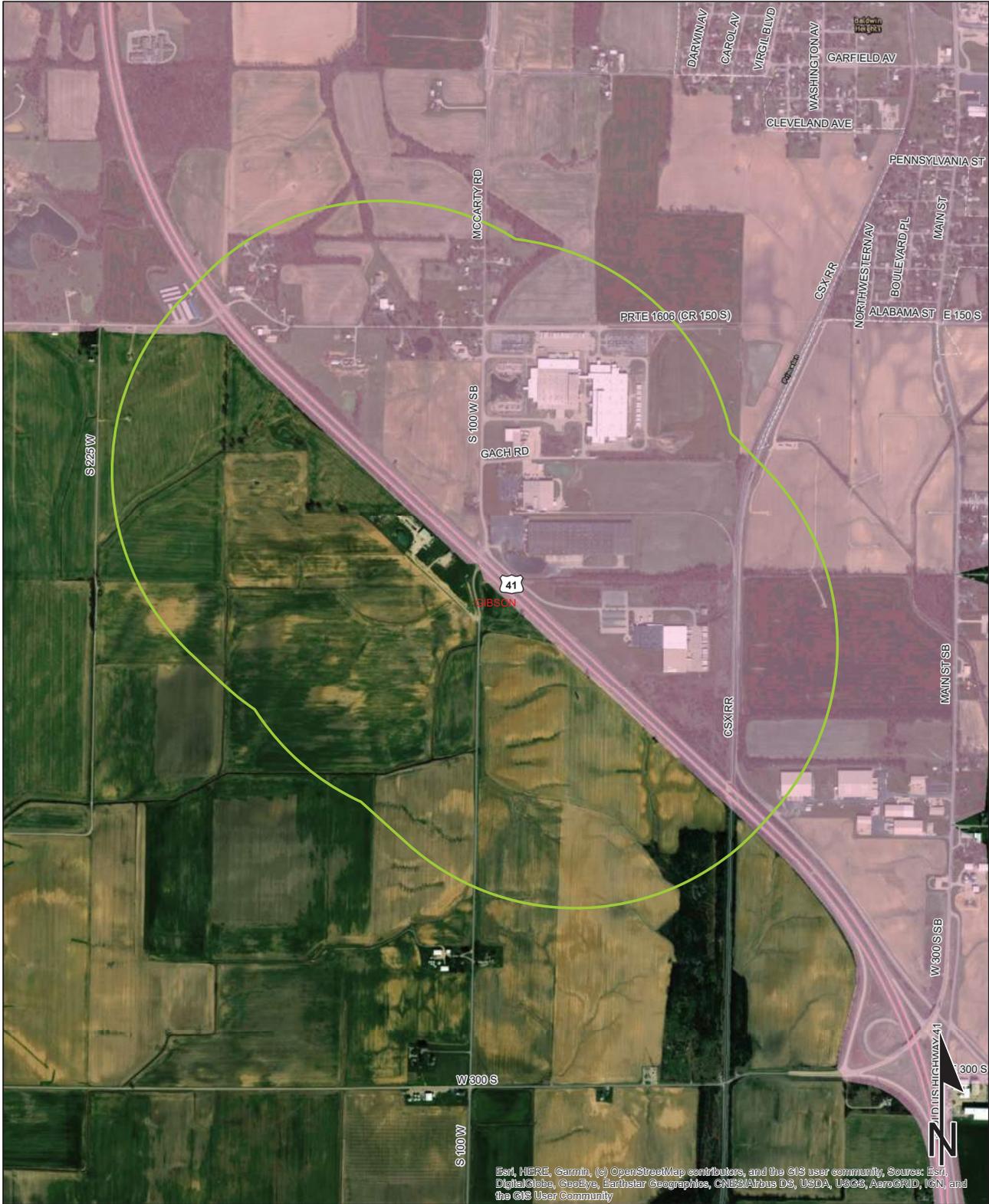
**PRINCETON
 QUADRANGLE INDIANA
 7.5 MINUTE SERIES
 (TOPOGRAPHIC)**

Red Flag Investigation - Water Resources
 US 41 and CR 100 W
 Des. No. 1800223, Intersection Improvement
 Gibson County, Indiana



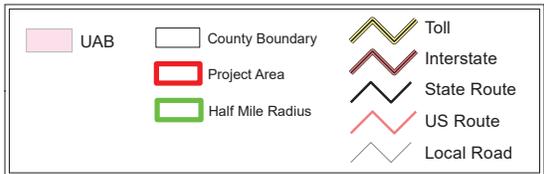
Sources: 0.25 0.125 0 0.25 Miles
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Red Flag Investigation - Urbanized Area Boundary US 41 and CR 100 W Des. No. 1800223, Intersection Improvement Gibson County, Indiana



Sources:
Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

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Indiana County Endangered, Threatened and Rare Species List

County: Gibson



Species Name	Common Name	FED	STATE	GRANK	SRANK
Crustacean: Malacostraca					
<i>Caecidotea beattyi</i>	An Isopod			G3G4	S1
<i>Orconectes indianensis</i>	Indiana Crayfish		SR	G3	S2
Mollusk: Bivalvia (Mussels)					
<i>Cumberlandia monodonta</i>	Spectaclecase	LE	SX	G3	SX
<i>Cyprogenia stegaria</i>	Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
<i>Epioblasma flexuosa</i>	Leafshell		SX	GX	SX
<i>Epioblasma propinqua</i>	Tennessee Riffleshell		SX	GX	SX
<i>Epioblasma torulosa</i>	Tubercled Blossom	LE	SX	GX	SX
<i>Epioblasma triquetra</i>	Snuffbox	LE	SE	G3	S1
<i>Fusconaia subrotunda</i>	Longsolid	C	SX	G3	SX
<i>Lampsilis abrupta</i>	Pink Mucket	LE	SX	G2	SX
<i>Lampsilis ovata</i>	Pocketbook		SSC	G5	S2
<i>Obovaria retusa</i>	Ring Pink	LE	SX	G1	SX
<i>Obovaria subrotunda</i>	Round Hickorynut	C	SE	G4	S1
<i>Plethobasus cicatricosus</i>	White Wartyback	LE	SX	G1	SX
<i>Plethobasus cooperianus</i>	Orangefoot Pimpleback	LE	SX	G1	SX
<i>Plethobasus cyphus</i>	Sheepnose	LE	SE	G3	S1
<i>Pleurobema clava</i>	Clubshell	LE	SE	G1G2	S1
<i>Pleurobema cordatum</i>	Ohio Pigtoe		SSC	G4	S2
<i>Pleurobema plenum</i>	Rough Pigtoe	LE	SE	G1	S1
<i>Pleurobema rubrum</i>	Pyramid Pigtoe		SX	G2G3	SX
<i>Potamilus capax</i>	Fat Pocketbook	LE	SE	G2	S1
<i>Ptychobranhus fasciolaris</i>	Kidneyshell		SSC	G4G5	S2
<i>Theliderma cylindrica</i>	Rabbitsfoot	LT	SE	G3G4	S1
Insect: Ephemeroptera (Mayflies)					
<i>Homoeoneuria ammophila</i>	Sand-loving Brush-legged Mayfly		ST	G4	S2
<i>Pentagenia vittigera</i>	common spiny-headed burrowing mayfly		WL	G5	S3
<i>Pseudiron centralis</i>	White Crabwalker Mayfly		SE	G5	S1
Fish					
<i>Atractosteus spatula</i>	Alligator Gar		SSC	G3G4	SX
<i>Etheostoma squamiceps</i>	Spottail Darter			G4G5	S2S3
Amphibian					
<i>Acris blanchardi</i>	Blanchard's Cricket Frog		SSC	G5	S4
Reptile					
<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle		SE	G5T5	S2
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	C	SE	G3G4	SH
<i>Nerodia erythrogaster neglecta</i>	Copperbelly Water Snake	PS:LT	SE	G5T3	S2
<i>Opheodrys aestivus</i>	Rough Green Snake		SSC	G5	S3

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Indiana County Endangered, Threatened and Rare Species List

County: Gibson



Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Pseudemys concinna concinna</i>	Eastern River Cooter		SE	G5T5	S1
<i>Terrapene carolina carolina</i>	Eastern Box Turtle		SSC	G5T5	S3
Bird					
<i>Accipiter striatus</i>	Sharp-shinned Hawk		SSC	G5	S2B
<i>Ammodramus henslowii</i>	Henslow's Sparrow		SE	G4	S3B
<i>Botaurus lentiginosus</i>	American Bittern		SE	G5	S2B
<i>Circus hudsonius</i>	Northern Harrier		SE	G5	S2
<i>Cistothorus platensis</i>	Sedge Wren		SE	G5	S3B
<i>Falco peregrinus</i>	Peregrine Falcon		SSC	G4	S2B
<i>Gallinula galeata</i>	Common gallinule		SE	G5	S3B
<i>Haliaeetus leucocephalus</i>	Bald Eagle		SSC	G5	S2
<i>Ixobrychus exilis</i>	Least Bittern		SE	G4G5	S3B
<i>Lanius ludovicianus</i>	Loggerhead Shrike		SE	G4	S3B
<i>Mniotilta varia</i>	Black-and-white Warbler		SSC	G5	S1S2B
<i>Nyctanassa violacea</i>	Yellow-crowned Night-heron		SE	G5	S2B
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron		SE	G5	S1B
<i>Phalaropus tricolor</i>	Wilson's Phalarope		SSC	G5	SHB
<i>Rallus elegans</i>	King Rail		SE	G4	S1B
<i>Setophaga cerulea</i>	Cerulean Warbler		SE	G4	S3B
<i>Sternula antillarum athalassos</i>	Interior Least Tern	LE	SE	G4T3Q	S1B
<i>Thryomanes bewickii</i>	Bewick's Wren			G5	S1B
<i>Tyto alba</i>	Barn Owl		SE	G5	S2
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	C	SE	G4	S1B
Mammal					
<i>Lasiurus borealis</i>	Eastern Red Bat		SSC	G3G4	S4
<i>Mustela nivalis</i>	Least Weasel		SSC	G5	S2?
<i>Myotis lucifugus</i>	Little Brown Bat	C	SE	G3	S2
<i>Myotis septentrionalis</i>	Northern Long Eared Bat	LT	SE	G1G2	S2S3
<i>Myotis sodalis</i>	Indiana Bat	LE	SE	G2	S1
<i>Nycticeius humeralis</i>	Evening Bat		SE	G5	S1
<i>Perimyotis subflavus</i>	Tricolored Bat		SE	G2G3	S2S3
<i>Sylvilagus aquaticus</i>	Swamp Rabbit		SE	G5	S1
<i>Taxidea taxus</i>	American Badger		SSC	G5	S2
Vascular Plant					
<i>Acalypha deamii</i>	Deam's two-seeded mercury		WL	G4?	S3
<i>Azolla caroliniana</i>	Carolina mosquito-fern		ST	G5	S3
<i>Calycocarpum lyonii</i>	cup-seed		ST	G5	S2
<i>Carex gigantea</i>	large sedge		SE	G4	S1
<i>Carex socialis</i>	social sedge		ST	G4	S2
<i>Carex straminea</i>	straw sedge		ST	G5	S2

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Indiana County Endangered, Threatened and Rare Species List

County: Gibson



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<i>Catalpa speciosa</i>	northern catalpa		ST	G4?	S3
<i>Chelone obliqua</i> var. <i>speciosa</i>	rose turtlehead		WL	G4T3	S3
<i>Clematis pitcheri</i>	Pitcher's leather-flower		ST	G4G5	S3
<i>Crataegus viridis</i> var. <i>viridis</i>	green hawthorn		ST	G5T5	S2
<i>Cyperus pseudovegetus</i>	green flatsedge		ST	G5	S3
<i>Didiplis diandra</i>	water-purslane		SE	G5	S1
<i>Diodia virginiana</i>	buttonweed		WL	G5	S3
<i>Gleditsia aquatica</i>	water-locust		SE	G5	S1
<i>Hibiscus moscheutos</i> ssp. <i>lasiocarpus</i>	hairy-fruited hibiscus		SE	G5T4	S1
<i>Hypericum adpressum</i>	creeping St. John's-wort		SE	G3	S1
<i>Iresine rhizomatosa</i>	eastern bloodleaf		ST	G5	S3
<i>Juglans cinerea</i>	butternut		ST	G3	S2
<i>Linum striatum</i>	ridged yellow flax		WL	G5	S3
<i>Ludwigia decurrens</i>	primrose willow		WL	G5	S3
<i>Orobanche riparia</i>	bottomland broomrape		SE	G4?	S1
<i>Platanthera flava</i> var. <i>flava</i>	southern rein orchid		SE	G4?T4?Q	S1
<i>Potamogeton pusillus</i>	slender pondweed		WL	G5	S2
<i>Rorippa aquatica</i>	lake cress		SE	G4?	S1
<i>Sparganium androcladum</i>	branching bur-reed		ST	G4G5	S2
<i>Strophostyles leiosperma</i>	slick-seed wild-bean		WL	G5	S3
<i>Styrax americanus</i>	American snowbell		ST	G5	S3
<i>Taxodium distichum</i> var. <i>distichum</i>	bald cypress		ST	G5	S2
<i>Thyrsanthella difformis</i>	climbing dogbane		ST	G4G5	S3
<i>Vitis palmata</i>	catbird grape		ST	G4	S3
High Quality Natural Community					
<i>Forest - floodplain wet-mesic</i>	Wet-mesic Floodplain Forest		SG	G3?	S3
<i>Forest - upland dry-mesic Southern Bottomlands</i>	Southern Bottomlands Dry-mesic Upland Forest		SG	GNR	S1
<i>Forest - upland dry-mesic Southwestern Lowlands</i>	Southwestern Lowlands Dry-mesic Upland Forest		SG	GNR	S1
<i>Forest - upland mesic Southwestern Lowlands</i>	Southwestern Lowlands Mesic Upland Forest		SG	GNR	S1
<i>Wetland - swamp shrub</i>	Shrub Swamp		SG	GU	S2
Other Significant Feature					
<i>Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade</i>	Water Fall and Cascade			GNR	SNR

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US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

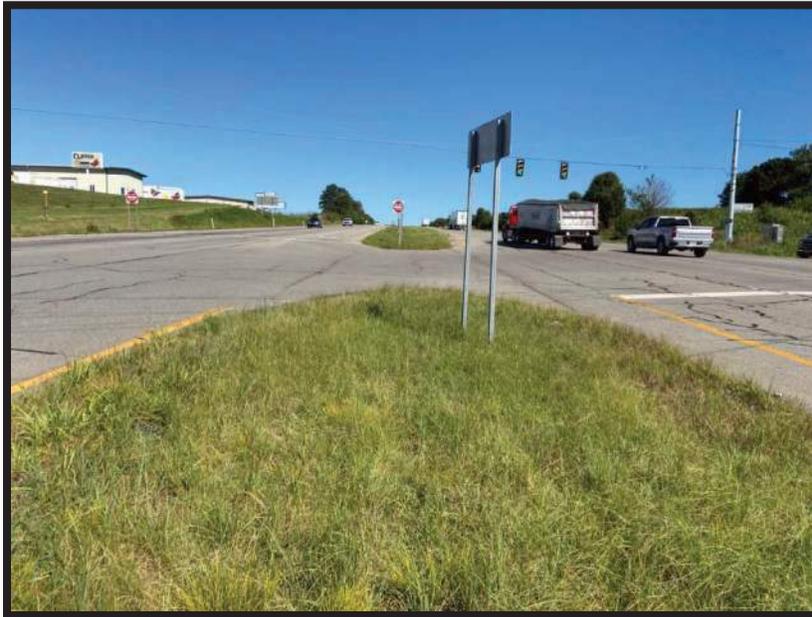
Appendix F: Water Resources

Approved 10.29.2020 by:

Maryssa Engstrom

Waters of the U.S. Report

US 41 AND CR 100 W. INTERSECTION IMPROVEMENT



GIBSON COUNTY

DES. NO.
1800223

ASSET ID
N/A

Prepared by:

HNTB

111 Monument Circle, Suite 1200

Indianapolis, IN, 46204

317.636.4682

October 19, 2020

1. PROJECT INFORMATION

Date(s) of Field Reconnaissance: July 13, 2020

Location

The project is located at US 41 and Country Road (CR) 100 W. in Gibson County, Indiana.

- Section 24, Township 2 S, Range 11 W
- Princeton Quadrangle, Indiana
- 38.326616 N, -87.584641 W (NAD83)
- Investigation

Project Description

The Federal Highway Administration (FHWA) and Indiana Department of Transportation (INDOT), Vincennes District are planning to proceed with an intersection improvement project at US 41 and CR 100 W in Gibson County, Indiana. Project activities will include the reconstruction of the existing signalized intersection. The new intersection will be an unsignalized J-Turn. Sections of the existing roadway will be removed and acceleration and turning lanes in each direction will be constructed. New lighting along the intersection will be provided. The investigated area length is 0.56 miles long and is dominated by maintained right-of-way and roadside ditches.

2. DESKTOP RECONNAISSANCE

2.1 SOIL ASSOCIATIONS AND SERIES TYPES

According to the Soil Survey Geographic (SSURGO) Database for Gibson County, Indiana, the following mapped soils series are within the US 41 and CR 100 W investigated area (Attachments, pages 6-7).

- **Alford silt loam (AIB2):** very deep, well drained soils formed in loess. These soils are commonly on loess hills and less commonly on outwash plains. Slopes range from 0 to 60 percent. Alford silt loam is not considered a hydric soil. This soil type has a hydric rating of 0%.
- **Reesville silt loam (RIA):** Somewhat poorly drained soils on loess capped till plains of Wisconsinan age. Slope ranges from 0 to 7 percent. The soils formed in 102 to 152 cm (40 to 60 inches) of loess and are underlain by loam, clay loam, or silt loam till. Reesville silt loam is not considered hydric; however, hydric inclusions of Ragsdale are found within depressions and stream terraces. This soil type has a hydric rating of 5%.
- **Sylvan silt loam, 2 to 6 percent (SyB2):** very deep, well drained soils on loess covered till plains and high stream terraces on till plains. They formed in loess. Slopes range from 2 to 6 percent. Sylvan silt loam is not considered hydric. This soil type has a hydric rating of 0%.

- **Sylvan silt loam, 6 to 122 percent (SyC3):** very deep, well drained soils on loess covered till plains and high stream terraces on till plains. They formed in loess. Slopes range from 6-12 percent. Sylvan silt loam is not considered hydric. This soil type has a hydric rating of 0%.
- **Udorthents, cut and filled (Ud):** well drained to excessively drained soils along mainly the southern edge of Block Island adjacent to Block Island Sound in the Mohegan Bluff area. Wind, waves, and rain have eroded these soils and undercut areas on bluffs. Slopes range from 0 to 10 percent. Udorthents, cut and filled is not considered hydric. This soil type has a hydric rating of 0%.
- **Uniontown silt loam (UnB2):** moderately well drained soils on low stream terraces. These soils formed in older calcareous alluvium from loess. Slopes commonly range from 0 to 6 percent. Uniontown silt loam is not considered hydric; however, hydric inclusions of Ragsdale and Evansille are found within depressions on lake plains. This soil type has a hydric rating of 6%.
- **Wakeland silt loam (Wa):** very deep, somewhat poorly drained soils that formed in silty alluvium. These soils are on flood plains and flood-plain steps. Slopes are from 0 to 2 percent. Wakeland silt loam is not considered hydric; however, hydric inclusions of Birds-Frequently flooded are found within floodplains. This soil type has a hydric rating of 5%.

2.2 NATIONAL WETLANDS INVENTORY

Based on the U.S. Fish and Wildlife National Wetland Inventory (NWI) data (www.fws.gov/wetlands/Data/State-Downloads.html) there are no wetlands within the investigated area (Attachments, page 5). One wetland is located adjacent (0.01 mile) to the investigated area on the east side of US 41. This wetland is a palustrine, unconsolidated bottom, intermittently exposed, excavated freshwater pond (PUBGx).

2.3 NATIONAL HYDROGRAPHY DATABASE FLOWLINES

Three flowlines from the National Hydrography Dataset (NHD) are mapped within the investigated area (Attachments, page 4). The flowlines were identified as UNT to Brown Ditch (Photo ID 9, 10, 26, Photo Attachment Pages 19 and 27), UNT 1 (Photo ID 3-8, 46-56, Photo Attachment Pages 16-18, 37-42), and UNT 2 (Photo ID 13-16, 21, 23, Photo Attachment Pages 21-22, 25, 26).

2.4 HYDROLOGY

The project area is located within two watersheds; Skeleton Creek-Brown Ditch (12-Digit HUC: 051201130302) and Clear Fork Ditch-Pigeon Creek (12-Digit HUC: 051402020106). A local drainage basin within Skeleton Creek-Brown Ditch watershed drains the water resources in the project area. This drainage basin has a drainage area of 0.055 square miles (Attachments, page 9). According to the Indiana Floodplain Information Portal, the project is not located within a 100-year floodplain (<http://dnrm.dnr.in.gov/appsphp/fdms/>) (Attachments, page 8).

3. FIELD RECONNAISSANCE

HNTB Indiana staff performed a field review of the investigated area on July 13, 2020. The purpose was to determine the presence of waters of the U.S. within the investigated area. HNTB Indiana staff collected data during the field review to appropriately characterize the investigated area and determine the presence or absence of jurisdictional waters. The field investigation area encompassed the area required for construction access and completion of the intersection improvement project. HNTB staff photographed select features and area of interest throughout the investigated area. A photo location map and selected photographs are included as Attachments, pages 10-46.

The proposed investigated area was analyzed using the methods outlined in the Routine Determination, On-site Inspection Necessary procedure in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual Midwest Region* (US Army corps of Engineers, 2010). Identification of indicator status of plant species utilized the 2018 Midwest Region National Wetland Plant List. Field GIS data was collected using a Trimble R1 GNSS GPS with submeter accuracy.

4. WATERS

The July 13, 2020 field reconnaissance for the US 41 and CR 100 W. revealed four streams; UNT to Brown Ditch and UNTs 1-3 to Brown Ditch, one roadside ditch (RSDs), RSD 1, and one wetland, Wetland A.

4.1 WETLANDS

One wetland, Wetland A, was identified within the northeast quadrant of the project area within the roadside ditch of US 41 (Attachments, page 4).

Due to the presence of hydrophytic vegetation in the roadside ditch east of US 41, soil pits were excavated. These data points were taken to represent and characterize the roadside ditch of US 41 in this area. Roadside ditches and streams drain surface water throughout the rest of the investigated area.

Wetlands were not identified, and no data points were taken within the southeast, southwest, or northwest quadrants within the investigated area. The northwest quadrant is drained by UNT 1, the remaining area of the northeast quadrant is drained by UNT 1, the southeast quadrant is drained by UNT 1, UNT to Brown Ditch, UNT 2, and the southwest quadrant is drained by UNT 3 and UNT to Brown Ditch.

WETLAND A

Wetland A is an emergent wetland within the roadside ditch of US 41. Within the investigated area, Wetland A totals approximately 0.038 acre. This wetland developed as a result of its position within a roadside ditch with relatively low relief and compacted soils. This wetland is not mapped as an NWI wetland. As demonstrated by the USGS topographic maps (Attachments, pages 2-3), Wetland A is bounded on the west side by the roadside slope US 41. To the east, this wetland is bounded by a slope up into an agricultural area outside of the right of way fence. Based on a qualitative analysis of Wetland A, this wetland is of poor quality due to the presence of invasive species and its position within the roadside ditch of US 41.

DATA POINT AW1

This data point was taken east of US 41 within the roadside ditch. The area was relatively homogenous, within little variation in topography and vegetative cover. Therefore, data point AW1 is thought to be representative of the entire wetland. Dominant vegetation consisted of lesser poverty rush (*Juncus tenuis*, FAC) and yellow nut sedge (*Cyperus esculentus*, FACW). This data point passed the dominance test for hydrophytic vegetation as 100% of the dominant species were FAC or wetter. The entire vegetative composition has a prevalence index of less than three; therefore, hydrophytic vegetation was observed. Soils within a pit excavated to a depth of 11 inches consisted of 0 to 4 inches of 10YR 3/2 clay loam. From 4-11 inches, soils were 80% 10YR 5/2 with 20% 10YR 4/6 concretions within the matrix. Shovel refusal was encountered at 11 inches due to compacted soils. This point exhibits depleted below dark surface (A11), and depleted matrix (F3) hydric soil indicators; and therefore, would be considered hydric soil. Hydrology indicators present were surface water (A1) and saturation (A3). There is a distinct change in hydrology and topography which establishes the boundary of Wetland A. The data form for this point is included in Attachments, pages 47-48.

DATA POINT AD1

This data point was taken east of the US 41 roadside ditch. Dominant vegetation consisted of tall fescue (*Schedonorus arundinacea*, FACU). Hydrophytic vegetation was not found at this data point as it did not pass the dominance test or prevalence index. Soils within a pit excavated to a depth of 11 inches consisted of 0 to 2 inches 10YR 4/4 sandy loam. From 2-11 inches, soils were 10YR 5/6 sandy loam. Shovel refusal was encountered at 11 inches due to compacted soils. This point did not exhibit any hydric soil indicators; therefore, hydric soil is not present. No hydrology indicators were observed as surface water from this area drains into Wetland A; therefore, this point was not within a wetland and determined the boundary of Wetland A. The data form for this point is included in Attachments, pages 50-51.

TABLE 1: WETLAND SUMMARY TABLE

Wetland	Photo	Lat/Long	Cowardin Classification	Areas (Acre)	Quality	Water of the U.S.?
A	43, 44	38.329021 N, -87.587661 W	PEM	0.038	Poor	No

TABLE 2: DATA POINT SUMMARY TABLE

Data Point-ID	Vegetation	Soils	Hydrology	Within a Wetland?
AW1	Yes	Yes	Yes	Yes
AD1	No	No	No	No

4.2 STREAMS

The site investigation resulted in the identification of four streams: UNT to Brown Ditch, UNT 1, UNT 2, and UNT 3. A total of approximately 2,585 linear feet of stream lie within the investigated area. Characteristics of UNTs to Brown Ditch are summarized in Table 2. The ordinary high-water mark (OHWM) was obtained for the stream using GPS and a measuring tape, outside of the influence of any structures. The OHWM elevation for all delineated streams is 470.8 feet. According to the USGS StreamStats websites,



(<https://water.usgs.gov/osw/streamstats/indiana.html>), the streams drain approximately 0.055 square miles upstream of the project area (Attachments, page 9).

UNT TO BROWN DITCH

UNT to Brown Ditch receives runoff from US 41 and surrounding agricultural fields. UNT to Brown Ditch flows southwest through a 152 foot long and 42 inch wide corrugated metal pipe culvert. It then continues southwest outside of the investigated area eventually draining into the Wabash River, a traditionally navigable waterway (TNW). UNT to Brown Ditch flows through a corrugated metal pipe culvert beneath US 41. Approximately 325 feet of this feature are within the investigated area.

UNT to Brown Ditch exhibited 3 feet wide by 6 inches deep OHWM during the site investigation. This measurement of the OHWM was taken at the largest point not within the influence of any structures. The substrate of UNT to Brown Ditch was identified as silt and riprap. The aquatic and terrestrial habitat quality of UNT to Brown Ditch is considered poor based on the lack of development, low sinuosity, and low stability. Vegetation within the narrow riparian corridor of UNT to Brown Ditch consisted primarily of reed canary grass (*Phalaris arundinacea*), Japanese honeysuckle (*Lonicera japonica*).

UNT to Brown Ditch is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Attachments, pages 2-3). According to the classification codes developed by Cowardin et al. (1979), this stream feature would be classified as riverine, ephemeral resource (R6). This stream is classified as ephemeral due to the presence of water being limited to after precipitation events. Groundwater is not a source of water for the stream; runoff from rainfall is the primary source of water for streamflow. As such, ephemeral streams are not noted as USGS Topographic Map blueline features but may be indicated by contour lines.

UNT 1

UNT 1 receives runoff from US 41 and surrounding agricultural fields. UNT 1 flows southeast into UNT to Brown Ditch, eventually draining into the Wabash River, a TNW. This stream travels at the toe of the roadside slope of US 41 and flows through a small drainage structure beneath SR 19. Approximately 1625 feet of this feature are within the investigated area.

UNT 1 exhibited 2 feet wide by 6 inches deep OHWM during the site investigation. This measurement of the OHWM was taken at the largest point not within the influence of any structures. The substrate of UNT 1 was identified as silt and riprap. The aquatic and terrestrial habitat quality of UNT 1 is considered poor based on the lack of development, lack of instream cover, lack of sinuosity, and low stability. Vegetation within riparian corridor of UNT 1 consisted primarily of reed canary grass (*Phalaris arundinacea*), narrow leaf cattail (*Typha angustifolia*), Japanese honeysuckle (*Lonicera japonica*), and bulrush (*Scirpus cyperinus*). There is a patch of narrow leaf cattail (*Typha angustifolia*) located within UNT 1. The OHWM of UNT 1 flows through the cattail growth. UNT 1 provides the hydrology for this area.

UNT 1 is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Attachments, pages 2-3). According to the classification codes developed by Cowardin et al. (1979), this stream feature would be classified as riverine, ephemeral resource (R6).

UNT 2

UNT 2 receives runoff from US 41, surrounding agricultural fields, and surrounding commercial properties. UNT 2 flows southwest through a small drainage structure beneath US 41. It then continues southwest outside of the investigated area eventually draining into the Wabash River, a TNW. Approximately 411 feet of this feature are within the investigated area.

UNT 2 exhibited 1.4 feet wide by 5 inches deep OHWM during the site investigation. This measurement of the OHWM was taken at the largest point not within the influence of any structures. The substrate of UNT 2 was identified as silt and riprap. The aquatic and terrestrial habitat quality of UNT 2 is considered poor based on the lack of development, lack of instream cover, and lack of stability. Vegetation within riparian corridor of UNT 2 consisted primarily of reed canary grass (*Phalaris arundinacea*), rice cut grass (*Leersia oryzoides*), and narrow leaf cattail (*Typha angustifolia*).

UNT 2 is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Attachments, pages 2-3). According to the classification codes developed by Cowardin et al. (1979), this stream feature would be classified as riverine, ephemeral resource (R6).

UNT 3

UNT 3 receives runoff from US 41 and surrounding agricultural fields. UNT 3 northwest along US 41, eventually converging with UNT 2 and draining into the Wabash River, a TNW. This stream travels at the toe of the roadside slope of US 41 and does not flow through any structures. Approximately 224 feet of this feature are within the investigated area.

UNT 3 exhibited 1 feet wide by 4 inches deep OHWM during the site investigation. This measurement of the OHWM was taken at the largest point not within the influence of any structures. The substrate of UNT 3 was identified as silt, concrete, and riprap. The aquatic and terrestrial habitat quality of UNT 3 is considered poor based on the lack of development, lack of instream cover, and lack of stability. Vegetation within riparian corridor of UNT 3 consisted primarily of reed canary grass (*Phalaris arundinacea*), Japanese honeysuckle (*Lonicera japonica*), and rice cut grass (*Leersia oryzoides*).

UNT 3 is not noted on the USGS 7.5 Minute Princeton Topographic Map as a blueline feature (Attachments, pages 2-3). According to the classification codes developed by Cowardin et al. (1979), this stream feature would be classified as riverine, ephemeral resource (R6).

TABLE 2: STREAM AND WATERWAY SUMMARY TABLE

Stream Name	Photo #	Lat/Long	OHWM	Quality	Linear feet in Investigated area	Substrate	USGS Blue Line	Riffles/Pools	Waters of U.S.
UNT to Brown Ditch	9, 10, 26	38.325302 N, -87.582813 W	3 feet wide x 6 inches deep	Poor	325	Silt, riprap	No	No	No
UNT 1	3-8, 46-56	38.325786 N, -87.58316 W	2 feet wide x 6 inches deep	Poor	1625	Silt, riprap	No	No	No
UNT 2	13-16, 21, 23	38.324207 N, -87.581314 W	1.4 feet wide x 5 inches deep	Poor	411	Silt, riprap	No	No	No
UNT 3	19-21	38.323985 N, -87.581462 W	1 foot wide x 4 inches deep	Poor	224	Silt, concrete, riprap	No	No	No

4.3 ROADSIDE DRAINAGE FEATURES

The site investigation identified one roadside drainage features within the investigated area. RSD 1 not exhibit OHWMs, or defined bed and banks. The feature is likely non-jurisdictional. Photos of RSD 1 can be found in Attachments, pages 30-32.

4.4 OPEN WATERS

Site investigations did not identify open water features within the investigated area.

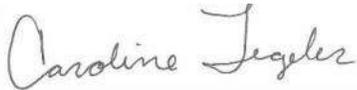
5. CONCLUSION

The July 2020 field review for the US 41 and CR 100 W. Intersection Improvement project did not identify any likely jurisdictional features.

Every effort should be taken to avoid and minimize the impacts to the water resources listed above. Disturbance of a wetland or stream could result in a mitigation requirement to secure the required permits for the Intersection Improvement project. If construction exceeds the limits of the survey review area illustrated in this document,

further field investigation will be needed. This report is this office’s best judgement of water resources that are likely to be under federal jurisdiction, based on the guidelines set forth by the U.S. Army corps of Engineers (USACE). The final determination of jurisdictional Waters is ultimately the responsibility of the USACE. The INDOT Office of Environmental Services should be contacted immediately if impacts occur.

This waters determination has been prepared based on the best available information, interpreted in the light of the investigator’s training, experience and professional judgement in conformance with the 1987 Corps of Engineers Wetlands Delineation Manual, the appropriate regional supplement, the USACE Jurisdictional Determination Form Instructional Guidebook, and other appropriate agency guidelines.



Caroline Tegeler, Scientist

PREPARERS:

HNTB Inc., Staff	Position	Contributing Effort
Rich Connolly	Science Project Manager	Project Management Field Data Collection
Caroline Tegeler	Scientist	Field Data Collection Report Preparation



Investigated Area	Streams
Wetlands	NHD Flowlines
Data Point	
Roadside Ditch	

0 175 350
 Feet

Delineated Features Map US 41 over CSX Railroad Concrete Bridge Replacement Gibson County, Indiana	
Des. No. 1593063	 Graphics created by HNTB Corporation (2020)
1 inch = 350 feet	



August 3, 2020

Wetlands

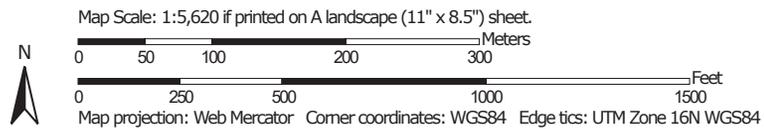
- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Soil Map—Gibson County, Indiana
(Des. No. 1800223)



Soil Map may not be valid at this scale.



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AIB2	Alford silt loam, 2 to 5 percent slopes, eroded	0.0	0.2%
RIA	Reesville silt loam, 0 to 2 percent slopes	0.7	4.0%
SyB2	Sylvan silt loam, 2 to 6 percent slopes, eroded	4.2	23.1%
SyC3	Sylvan silt loam, 6 to 12 percent slopes, severely eroded	5.6	31.3%
Ud	Udorthents, cut and filled	0.3	1.6%
UnB2	Uniontown silt loam, 2 to 6 percent slopes, eroded	7.1	39.2%
Wa	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	0.1	0.7%
Totals for Area of Interest		18.0	100.0%



Indiana Floodplain Information Portal Report

Point of Interest

Effective Flood Zone:

X

Preliminary Flood Zone:

N/A

Best Available Flood Zone:

Approximate Flood Elevation:

470.8ft NAVD88

Source:

Zone A Model Delineation

Nearest Stream:

PIGEON CREEK

Map Legend

-  Point of Interest
-  Nearest Point on Stream

Best Available Flood Zone

-  FEMA Zone AE Floodway
-  DNR Detailed Floodway
-  DNR Approximate Floodway
-  FEMA Zone A
-  FEMA Zone AE
-  DNR Detailed Fringe
-  DNR Approximate Fringe
-  Additional Floodplain Area
-  FEMA Protected by Levee
-  FEMA Floodplain - Ponding (Depth)
-  FEMA Floodplain - Sheet Flow (Depth)

Site Map with Best Available Flood Zone



Disclaimer Approximate scale 1:36,000

Generated on Monday August 3rd 2020 at 03:07:14pm

The data shown on this map represents FEMA floodplain data enhanced with additional studies that have been reviewed and approved by the Division of Water. While this data has not yet been submitted to FEMA for inclusion in the Flood Insurance Rate Maps or the National Flood Hazard Layer, this data can be used for general planning, construction, and development purposes.

Caroline Tegeler

From: Engstrom, Maryssa H <MEngstrom@indot.IN.gov>
Sent: Thursday, October 29, 2020 12:50 PM
To: Caroline Tegeler
Cc: Rehder, Crystal; Richard Connolly; Howder, Aubrey
Subject: RE: Waters Report Approval and Permit Determination Questions - US 41 and CR 100 W. Intersection Improvement (Des. No. 1800223)
Attachments: FT_ 1800223 Waters Report Approved 10.29.2020.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Thanks Caroline, Hello Ryan,

Thank you for submitting the waters report for **US 41 and CR 100 W., Des. No. 1800223**. Your most recent submission has been reviewed and approved. For the INDOT PM, the approved report can be found on Projectwise through this link: [Des. No. 1800223 Waters Report - Final](#). It is the responsibility of the Project Manager to forward a copy of this report to the Project Designer.

The information in this report should be used by the Project Designer to determine if waters of the U.S. will be impacted by the project. Avoidance and minimization of impacts must occur before mitigation will be considered. If mitigation is required, the Project Manager or Project Designer must coordinate with the Ecology and Waterway Permitting Office to discuss how adequate compensatory mitigation will be provided.

The Project Manager should notify the Ecology and Waterway Permitting Office if there is any change to the project footprint presented in this report. Such changes may require additional fieldwork and submittal of an updated waters report covering areas not previously investigated. This report is only valid for a period of five years from the date of earliest fieldwork. If the report expires prior to waterway permit application submittal, additional fieldwork and a revised waters report will be required.

It will not be sent the Indiana Department of Environmental Management (IDEM) until the waterways permit applications are submitted to these agencies. I have submitted the approved report 10.29.2020 to the USACE for an Approved JD, I'll send out their response once received.

The following Permit Determination Questions can be submitted back to me for Permit Determination:

For the above referenced project, please get me answers to the following questions so that I may complete the permit determination.

- Will work be confined to the existing pavement? Please bear in mind that full-depth replacement and shoulder work is soil disturbance. If the answer to this is yes, then the remaining questions to not need answered.

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix G: Public Involvement

Sample Notice of
Survey Letter

June 25, 2019

Western, Patricia L. Et Al.
7768 W S R65
Petersburg, IN 47567

Re: Gibson County Tax Parcel – 63-05-04-200-002.000-001, 63-05-04-200-006.000-001

NOTICE OF SURVEY

Dear Property Owner:

HNTB, on behalf of The Indiana Department of Transportation (INDOT), will perform a survey for the purpose to improve the intersections of US 41 at CR 100 W near Princeton, IN in Gibson County, Indiana, Des No. 1800223. A portion of this survey work may be performed on your property in order to provide design engineers information for project design. The survey work will include mapping the location of features such as trees, buildings, fences, drives, ground elevations, etc. The survey is needed for the proper planning and design of this highway project.

At this stage we generally do not know what effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

Indiana Code 8-23-7-26 allows HNTB, as the authorized employees of INDOT, *Right of Entry* to the project site (including private property) upon proper notification. A copy of a Notice of Survey discussion sheet, as found on INDOT's website (<http://www.in.gov/indot/2888.htm>), is attached to this letter. Pursuant to Indiana Code 8-23-7-27, this letter serves as written notification that we will be performing the above noted survey in the vicinity of your property on or after June 25, 2019

HNTB employees will show you their identification, if you are available, before coming onto your property.

If you own but are not the tenant of this property (i.e. rental, sharecrop), please inform us so that we may also contact the actual tenant of the property prior to commencement of our work. If you have any questions or concerns regarding our proposed survey work or schedule, please contact the HNTB Project Manager. This contact information is as follows:

Jonathan Oakley, PE
111 Monument Circle, Suite 1200
Indianapolis, IN 46204
(317) 636-4682

Under Indiana Code 8-23-7-28, you have a right to compensation for any damage that occurs to your land or water as a result of the entry or work performed during the entry. To obtain such compensation, you should contact the Vincennes District Real Estate Manager; contact information is below. The District Real Estate Manager can provide you with a form to request compensation for damages. Once you fill out this form, you can return it to the District Real Estate Manager for consideration. If you are not satisfied with the compensation that INDOT determines is owed to you, Indiana Code 8-23-7-28 provides the following:

The amount of damages shall be assessed by the county agricultural extension educator of the county in which the land or water is located and two (2) disinterested residents of the county, one (1) appointed by the aggrieved party and one (1) appointed by the department. A written report of the assessment of damages shall be mailed to the aggrieved party and the department by first class United States mail. If either the department or the aggrieved party is not satisfied with the assessment of damages, either or both may file a petition, not later than fifteen (15) days after receiving the report, in the circuit or superior court of the county in which the land or water is located.

If you have questions regarding the rights and procedures outlined in this letter, please contact the Vincennes District Real Estate Manager. This contact information is as follows:

Jason Brown
3650 S. Hwy 41
Vincennes, IN 47591
(812) 895-7371

Thank you in advance for your cooperation in this matter.

Sincerely,

HNTB Corporation

A handwritten signature in blue ink that reads "William M. Jones". The signature is written in a cursive style with a large, looping initial "W".

William M. Jones
Supervisory Survey Technician

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix H: Air Quality

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Gibson County																		
Gibson County	1592990	Init.	VA VARI	Bridge Inspections	Countywide Bridge Inspection and Inventory Program for Cycle Years 2018-2021	Vincennes	0	Multiple		Local Funds	PE	\$0.00	\$32,166.73	\$30,143.83	\$2,022.90			
										Local Bridge Program	PE	\$128,666.95	\$0.00	\$120,575.33	\$8,091.62			
Indiana Department of Transportation	38706 / 1500029	Init.	US 41	Replace Superstructure	Over North Fork Richland Creek, 0.28 mile N of SR 64	Vincennes	0	NHPP		Bridge Construction	CN	\$3,966,015.20	\$991,503.80	\$4,957,519.00				
Indiana Department of Transportation	39768 / 1593061	Init.	SR 64	Pavement Replacement	From 1.79 mi W of I-69 to 1.33 mi W of I-69 (Francisco)	Vincennes	.54	STPBG		Bridge Construction	CN	\$438,102.40	\$109,525.60		\$547,628.00			
										Road Construction	CN	\$3,240,943.20	\$810,235.80		\$4,051,179.00			
Indiana Department of Transportation	40543 / 1700178	Init.	SR 64	Small Structure Paved Invert	3.76 miles W Jct SR-57	Vincennes	0	STPBG		Bridge Construction	CN	\$247,137.60	\$61,784.40			\$308,922.00		
										Bridge ROW	RW	\$9,600.00	\$2,400.00	\$12,000.00				
Indiana Department of Transportation	40544 / 1601060	Init.	SR 64	HMA Overlay, Preventive Maintenance	From US-41 to 1.00 mi E of US-41 in Princeton	Vincennes	.986	NHPP		Road Construction	CN	\$372,188.00	\$93,047.00			\$465,235.00		
Indiana Department of Transportation	40765 / 1702409	Init.	SR 64	Bridge Deck Sealing	SR 64 Bridge over the Wabash River	Vincennes	0	STPBG		Bridge Construction	CN	\$32,000.00	\$8,000.00	\$40,000.00				
Indiana Department of Transportation	41404 / 1593063	Init.	US 41	Bridge Replacement, Concrete	Over CSX Railroad, SBL, 2.85 miles S of SR-64	Vincennes	0	NHPP		Bridge Construction	CN	\$6,584,800.00	\$1,646,200.00				\$8,231,000.00	
										Safety Construction	CN	\$2,328,800.00	\$582,200.00				\$2,911,000.00	
Indiana Department of Transportation	41405 / 1800177	Init.	SR 65	HMA Overlay, Preventive Maintenance	From SR-64 Jct to 1.70 mi N of SR-64 Jct.	Vincennes	1.548	STPBG		Road Construction	CN	\$840,000.00	\$210,000.00				\$1,050,000.00	
										Road ROW	RW	\$36,000.00	\$9,000.00				\$45,000.00	
Indiana Department of Transportation	41406 / 1800220	Init.	US 41	Other Intersection Improvement	At SR168, Fort Branch	Vincennes	.29	NHPP		Safety Construction	CN	\$294,400.00	\$73,600.00				\$368,000.00	
Indiana Department of Transportation	41455 / 1592961	Init.	US 41	Bridge Deck Replacement	Over Patoka River, 2.95 miles N of SR-64	Vincennes	0	NHPP		Bridge Construction	CN	\$4,316,000.00	\$1,079,000.00				\$5,395,000.00	
Indiana Department of Transportation	41456 / 1800138	Init.	SR 168	Bridge Replacement, Concrete	Over Pigeon Creek, 02.54 mi E US-41	Vincennes	0	STPBG		Bridge Construction	CN	\$2,502,400.00	\$625,600.00				\$3,128,000.00	
										Bridge ROW	RW	\$10,560.00	\$2,640.00			\$13,200.00		

Gibson County Total
 Federal: \$25,347,613.35 Match :\$6,336,903.33 2020: \$5,160,238.16 2021: \$4,608,921.52 2022: \$787,357.00 2023: \$21,128,000.00 2024:

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

US 41 and CR 100 W. Intersection Improvement
Gibson County, Indiana
Des. No. 1800223

Appendix I: Additional Studies



The HNTB Companies
Infrastructure Solutions

111 Monument Circle
Suite 1200
Indianapolis, IN 46204-5178

Telephone (317) 636-4682
Facsimile (317) 917-5211
www.hntb.com

Excerpt of Abbreviated
Engineer's Report

Abbreviated Engineer's Report

The Project "Mini Scope" serves as the Abbreviated Engineer's Report.

Additional site photographs, Intersection Analysis Memo, Significant Work Zone Impact Worksheet, and Initial Site Visit Meeting Minutes have been included with the "Mini Scope."

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Project Mini Scope (by INDOT)

Call Application Report Project (Mini Scope)

Date:	1/30/2018	District:	VINCENNES	SCORE:	88
DES:	1800223	Sub-District:	Vincennes		
Proposed FY:	2023	Asset Group:	SAFETY		
Work Type:	Other Intersection Improvement	Work Category:	Intersection Improvement Project		

Project Location							
Route:	US 41	City/Town:		County 1	Gibson	County 2	
RP Start:	28.65			Latitude Start:	38°19'32.8"N	Longitude Start:	87°35'00.0"W
RP End:	28.68			Latitude End:	38°19'41.1"N	Longitude End:	87°35'11.4"W
AADT FY:	2017	AADT:	16578	% Trucks:	32.0%		
Length:	0.24	# Lanes:	4	Lane Mi:	0.96		
Func. Class:	Other Principal Arterial (OPA)			Area:		NHS:	Other NHS Route
Str. #		NBI #:		Bridge / Culvert: Length (FT) / Width (FT):		Bridge Area (SFT):	
Location Description:	US 41 and CR 100 W, in Gibson County						

SEE IT: WHAT IS THE CURRENT AND PROJECTED CONDITION AND WHY IS THIS A PROBLEM (FOCUS ON THE PROBLEM):

Several businesses are present on CR 100 to the east and at least one vacant business building. There is potential for future development. This intersection presently has a traffic signal in-place. The signal meets several of the warrants, but does impede traffic flow along US 41. Additionally, this site location sets below a significant hillcrest approximately 500 feet to the north of the intersection.

This site has experienced a significant rise in crashes and severity of crashes (including fatalities) in recent years. The primary crash type is rear ends on both NB and SB US 41 with some right angle crashes (crash report attached). According to The Hazard Elimination Program-Manual on Improving Safety of Indiana Road Intersections and Sections, if the ICF (Index Crash Frequency) and ICC (Index Crash Cost) values for a location are both greater than 2, the location is a "high crash" location. At this location the ICF is 0.40 and the ICC is 2.08.

INSERT ONE OR TWO PICTURES OF PRIMARY PROBLEM:



DATE AND TYPE OF LAST MAJOR TREATMENT:				DATE:	
PROJECT CONDITION RATINGS:		LOS:		Crash Rate:	0.4
Wearing Surface:		Deck:		Icc:	2.08
Type I Culverts/ pipes:		Bridge Scour:		Bridge/Culvert Super:	
IRI:		Bridge Paint:		Substructure (Bridge/ Culvert):	
PCR:		Friction #:		Culvert:	
		RUT:		Other:	

INTENT/ PURPOSE OF PROJECT (INITIAL STATEMENT OF ESSENTIAL PROJECT PURPOSE):

The primary intent and purpose of this project is to reduce the number of crashes at this location and reverse the trending increase in frequency of crashes.

Completed FULL SCOPE:	NO	KPI Delta:		KPI UNIT:	
-----------------------	----	------------	--	-----------	--

OWN IT: Alternatives

PRELIMINARY ALTERNATIVES THAT ARE CONTEMPLATED (ANALYSED) WITH COSTS:

The most viable option for improving this intersection appears to be a J-turn. The J-turn is generally considered safer than a signal by reducing the number of traffic conflict points and the conflict points that are present typically result in less severe crashes. Additionally, the J-turn will have a positive affect on the flow of traffic along US 41.

There are several things to consider regarding the design of J-turns at this location:

1. Obtain information on future development in this area from the local public agency and consider the information during the design process.
2. Consider allowing left turns at CR 100.
3. Consider locating the J-turn to the north beyond the crest of the vertical curve (hill) at this location. Adequate sight distance will be required for traffic using the J-turn to access SB US 41 north of the intersection. Similarly, the south J-turn location for traffic accessing NB US 41 will need to be carefully evaluated to accommodate sight distance concerns and proper distance from the intersection.
4. Consider NB and SB US 41 acceleration lanes to allow for better traffic flow, especially truck traffic, and to allow greater ease of maneuvering through the J-turns.
5. Evaluate NB and SB US 41 right turn lane lengths to ensure they are adequate. Lengthening of the right turn lanes may also be considered for greater ease of maneuvering through the J-turns.
6. Median widths are relatively narrow at this location. Evaluate type of trucks and their turning radii. If necessary, consider implementing a "loos" to accommodate turning trucks.
7. Signage shall be provided to allow for proper flow of traffic.
8. Lighting shall be provided along the entire length of the J-turns for safety.
9. Consider traffic enforcement when the J-turns are first placed in operation to ensure proper traffic usage.
10. Remove existing signal.

A minimum of two public meetings shall be anticipated to acclimate the traveling public to this uncommon type of intersection improvement. The J-turns at US 231 and SR 62 and US 231 at SR 68 can be referenced for design ideas.

Innovative alternative solutions will still be considered and are encouraged.

CONSEQUENCES IF NO ACTION IS TAKEN (DO NOTHING ALTERNATIVE IS SELECTED):

It is possible that this intersection will continue an increasing crash trend.

SECONDARY CONSIDERATIONS OR GOALS WITH COSTS:

There are no secondary considerations. However, the implementation of this project will allow for better flow of traffic along NB and SB US 41.

Attach extra sheets as necessary to fully describe the alternatives.

Will Further Analysis/Assessment be required beyond this form?

NO

SOLVE IT: Project Recommendations and Costs

QUANTIFIABLE PRIMARY GOAL(S) OF PROJECT (WHAT ARE WE PURCHASING SUCH AS CONDITION, SERVICE LIFE, LOS, OR CRF):

An improvement in safety for traffic using the intersection.

Estimated Total Project Costs:		COMMENTS	
Right of Way Purchase (RW1):	COST:	\$0.00	
Right of Way Services (RW2):	COST:	\$0.00	
Preliminary Engineering 1 (PE1):	COST:		
Preliminary Engineering 2 (PE2):	COST:	\$0.00	
Maintenance of Traffic:	COST:	\$0.00	
Railroad PE (RR1):	COST:	\$0.00	
Railroad PE (RR2):	COST:	\$0.00	
Environmental Study:	COST:	\$0.00	
Utilities PE (UT1):	COST:	\$0.00	
Utilities CN (UT2):	COST:	\$20,000.00	
Construction (CN):	COST:	\$2,500,000.00	
Construction Engineering (CE):	COST:	\$0.00	
Relinquishment Payment (RQP):	COST:	\$0.00	
Other Considerations:	COST:	\$0.00	

Other Projects within Limits

DES:	FY:	Work Type:	Location:
DES:	FY:	Work Type:	Location:
DES:	FY:	Work Type:	Location:

Miscellaneous Notes

ANTICIPATED NUMBER OF CONSTRUCTION SEASONS TO COMPLETE(1, 2 or 3 seasons):		1 FY
ANTICIPATED NUMBER OF YEARS TO COMPLETE DESIGN (1, 2 or 3 fiscal years):		1

CALL HISTORY:

Attachments

Pictures		Asset Team Scoring Sheet:	YES	Mobility History:	
Spreadsheets (calcs):	YES	Engineer Assessment:			
Solution Schematic:		Bridge/Culvert Inspection Report:			
Cost Calculations:		Accident History:	YES		
Location Map:	YES	Pathway Data:			

Additional Comments

Other items relevant to the project not specifically listed elsewhere.

CE 1 with rule 5 permit anticipated at a minimum.

NOTE: Appropriate environmental and assessment process need to be followed.

Report Prepared By and Approved By

Report Prepared By and Approved By		Title:	Signature	
Prepared by:	Randall L. Phegley, P.E.	District Asset Engineer	<i>Randall L. Phegley</i>	
Reviewed by:	Terry Bough, P.E.	District Traffic Engineer	<i>Terry Bough</i>	
Reviewed by:	Duane Decker, P.E.	District Scoping Manager	<i>Duane Decker</i>	
Reviewed by:	Khalil Dughhaish, P.E.	System Asset Manager	<i>Khalil Dughhaish</i>	
Approval by:	Valerie Cockrum	Technical Services Director	<i>Valerie Cockrum</i>	APPROVED ON:

DES:		Date:	3/20/2018
Analyst:	RLP	Project Cost (today's dollars):	\$2,830,000
District:	Vincennes	Route:	US 41
Location:	US 41 and CR 100 W, in Gibson County		
City:	South of Princeton	County:	Gibson
Notes:	I _{cc} = 2.2; I _{cf} = -0.3		

Factor	Rating	Score	Weight	Total
#1 Traffic Safety (I _{cc} -based) (type number=>)	2.20	5	6	30
#2 Compliance with Current Standards	Moderately Substandard	3	2	6
#3 Operational Status	Adequate Operational Condition	3	3	9
#4 Cost-Effectiveness (value)	(imported from worksheet Factor #4)	5	6	30
#5 Public and Other Interests	Very High Level of Positive Support	5	2	10
#6 Route Continuity and Corridor Completion	Positive Effect on Consistency and Conformity	3	1	3
			Team Score	88
#7 Earmarks & External Contributions	(if applicable, refer to business rules)	0	7	0
			Total Score	88

Index of Crash Frequency and Cost - Form F1

Location	US 41 at CR 100W	
South of Princeton		
GIS	Lat= 38.326580	Long= -87.584636
Post	RP 28+66	
Analyst	Randall L. Phegley, P.E.	
Date	3/20/2018	

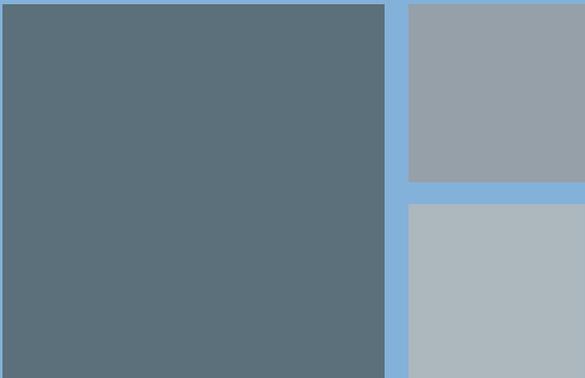
INPUT	
Road Facility Type	Signalized Rural State-Local Intersection
Major Road AADT (veh/day)	17725
T-intersection Indicator (1 if present, 0 otherwise)	0
First Year with Crash Data (yyyy)	2013
Last Year with Crash Data (yyyy)	2016
Number of Crashes (crash/period)	
Fatal and Incapacitating Injury Crashes	8
Non-Incapacitating and Possible Injury Crashes	1
Property Damage Only Crashes	11
Route or Road Type	Signalized Rural State-Local Intersection
Average Crash Costs (\$)	
Fatal and Incapacitating Injury Crashes	341100
Non-Incapacitating and Possible Injury Crashes	32600
Property Damage Only Crashes	6800
Crash Cost Year (yyyy)	2013
OUTPUT	
Expected Crash Frequency (crash/year)	
Fatal and Incapacitating Injury Crashes	0.163
Non-Incapacitating and Possible Injury Crashes	1.31
Property Damage Only Crashes	4.64
All Crashes	6.11
Index of Crash Frequency	-0.29
Index of Crash Cost	2.18

Index of Crash Frequency and Cost - Form F1

Location	US 41 at CR 100W	
South of Princeton		
GIS	Lat= 38.326580	Long= -87.584636
Post	RP 28+66	
Analyst	Randall L. Phegley, P.E.	
Date	3/20/2018	

Comments: Two fatalities in 2017

Intersection Analysis Memo



US 41 Intersection Analysis

Princeton, IN
US 41 at CR 100 West
DES 1800223

April 22, 2020

PREPARED FOR

INDOT Vincennes District
3650 Old Hwy 41
Vincennes, IN 47591

PREPARED BY

HNTB Corporation
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

Phone: (317) 636 - 4682
Contact: Sarah Baty, PE, PTOE
Dan Thatcher, PE, Project Manager



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Appendices

- A. INDOT mini-scope (January 2018)
- B. Traffic counts
- C. Existing and No Build Traffic Operations Analysis
- D. Crash Analysis
- E. J-Turn Graphic and Traffic Operations Analysis
- F. Green-T Graphic and Traffic Operations Analysis

Project History

The intersection at US 41 and CR 100 W near Princeton, Indiana was identified as a high crash location. INDOT prepared a mini-scope for improvements at the intersection in January 2018, which proposed a J-Turn. Refer to **Appendix A** for the scoping report prepared by INDOT. Extensive analysis was not performed at that time. Before proceeding into design, alternative solutions are being considered at this intersection.

Existing Conditions

US 41 is a principal arterial that carries 16,000 vehicles per day with 32% trucks. The US 41 corridor has a mix of interchanges and at-grade intersections. The property adjacent to US 41 is mainly agricultural, with residential and some commercial development interspersed. There is a hillcrest on US 41 north of the intersection with CR 100 W. The adjacent intersection to the north is at CR 150 S and is 3,800 feet away. The interchange at US 41 and Old US 41/CR 300 S is approximately 1 mile south of the intersection at CR 100 W.

CR 100 W provides access to an industrial park and commercial properties north of US 41. It is classified as a major collector north of US 41 and carries 3,500 vehicles per day. Two commercial drives as well as a local access road S CR 100 W intersect with CR 100 W north of US 41. Recently 2nd Avenue was constructed from north of CR 100 W to SR 64/Broadway Street.

West of US 41, CR 100 W is classified as a local road. It provides access to a commercial property and agricultural land west of US 41, and has low traffic volumes.

The intersection at US 41 and CR 100 W is controlled by a traffic signal. Left turns from US 41 are protected only. CR 100 W is served with a single phase.

Forecasted Traffic

Turning movement counts were collected on February 28, 2019. A growth rate of 0.5% per year was assumed for 20 years. The growth rate was selected based on a review of historic counts. Since 2012, traffic on US 41 has not experienced growth. The US 41 corridor parallels I-69, so it is not anticipated that “through traffic” will increase. Due to the extension of CR 100 W adjacent to developable land a modest growth rate was assumed. Traffic counts are included in **Appendix B**.

Existing Traffic Operations

The signalized intersection at US 41 and CR 100 W currently performs at LOS B during the AM and PM peak hours and is anticipated to continue performing at LOS B in 2039. Traffic operations was not identified as a project need. Refer to **Appendix C** for traffic operations analysis summaries and reports.

Crash History

The crash analysis prepared for the mini-scope indicated that there were 14 crashes over a three-year period from October 2013 to September 2016. The index of crash cost (I_{cc}) and index of crash frequency (I_{cf}) were calculated using RoadHAT. An I_{cc} or I_{cf} greater than 1.0 indicates there are higher than expected crash cost or crash frequency for a location than would be expected given the functional classification and traffic volume. The I_{cc} for the intersection is 2.08 and the I_{cf} is 0.40. Refer to **Appendix A** for information on the previous crash analysis.

Updated crash data for October 2014 to April 2019 was evaluated. There were 32 crashes over the 4.5-year period. Crashes were refined to focus only on crashes that were related to the intersection. The most common crash types were rear ends and right-angle crashes, which are typically severe crashes. Other crash types that resulted in personal injury include left turn and same direction sideswipe. Injury severity information was not available at the time the analysis was performed, so updated I_{cc} and I_{cf} were not calculated. Refer to **Appendix D** for the updated crash analysis.

There is a clear trend of rear end crashes on US 41 northbound and US 41 southbound. There were 18 rear end crashes, and more than half were severe crashes. One of the rear end crashes was fatal and involved a semi-trailer. There were twice the amount of rear end crashes that occurred on the US 41 southbound approach compared to US 41 northbound. There is a hillcrest north of the intersection on US 41 that limits sight distance for southbound traffic approaching the CR 100 W intersection

Right-angle crashes occurred at the intersection. Though there were only 6 right angle crashes, 2 were fatal crashes. One of the fatal right-angle crashes involved a semi-trailer.

Identified Needs/Project Intent

There are high crashes at the intersection of US 41 and CR 100 W. A majority of the crashes are rear ends or right-angle crashes. The need is to reduce the number of crashes at the intersection. Traffic operations were not identified as a need, but the selected alternative should provide acceptable traffic operations in the design year per the Indiana Design Manual design criteria.

Alternatives Analysis

A J-Turn intersection and Green-T intersection were evaluated based on traffic operations, mobility, and traffic safety. A realignment of CR 100 W is included in both alternatives.

J-Turn Intersection

The original project scope was to construct a J-Turn at the intersection of US 41 and CR 100W. Preliminary signal warrant analysis indicated that the U-turns do not currently meet signal warrants; however, the northern U-turn may meet signal warrants in the design year. The U-turn intersection performs acceptably without a signal in the design year, so unsignalized intersections are included in the J-Turn alternative. Refer to **Appendix E** for a graphic of the J-Turn and traffic operations analysis.

Green-T Intersection

A Green-T intersection was evaluated at the intersection of US 41 and CR 100 W. The existing intersection is not a T intersection, but the west leg has low volumes. The Green-T concept was modified to allow right-in-right-out access for the west approach. Traffic on US 41 southbound would be free-flow and US 41 northbound would be signalized to allow for westbound left turns. Refer to **Appendix F** for a graphic of the Green-T and traffic operations analysis.

Traffic Operations

Traffic analysis was performed using Highway Capacity Manual (HCM) methodologies. The analysis indicates that there are no operational deficiencies and that the unsignalized J-Turn intersection and Green-T intersection perform acceptably.

The delay and level of service (LOS) were calculated and summarized in **Table 1** for the existing intersection, J-Turn, and Green-T using Synchro software. The intersection LOS is reported for signalized

intersection; however, this metric does not apply to unsignalized intersections. For unsignalized intersections LOS for the approaches with stop or yield control are reported. The intersection currently performs at LOS B during the AM and PM peak hours and is forecasted to perform at LOS B during the peak hours in 2039. The Green-T intersection would reduce delay and the intersection would perform at LOS A during the AM and PM peak hours in 2039. The J-Turn is unsignalized, intersection LOS is not applicable. The LOS for the approaches with stop or yield control at the primary intersection and U-turns perform at LOS C or better in 2039 during the AM and PM peak.

Table 1: Intersection and Movement LOS

	AM Peak LOS	PM Peak LOS
2019 Existing		
Northbound	A	B
Eastbound	B	B
Southbound	B	A
Westbound	D	C
Intersection	B	B
2039 No Build		
Northbound	B	B
Eastbound	B	B
Southbound	B	A
Westbound	D	C
Intersection	B	B
2039 J-Turn		
Northbound U-Turn	C	B
Southbound U-Turn	B	C
Eastbound	B	B
Westbound	B	C
2039 Green-T		
Northbound	A	A
Eastbound	A	A
Southbound	A	A
Westbound	B	B
Intersection	A	A

Mobility

The alternatives are evaluated on mobility, including eliminating or changing the route of intersection movements (e.g. eastbound left turn). The J-Turn will serve all movements and provide full access to accommodate potential residential or commercial development. The left turns and through traffic from the minor approaches will be routed to the U-turn intersections. The westbound left turn is a critical movement with high traffic volumes, so more detailed analysis was performed. The westbound left turn travel times for the Green-T and J-Turn are compared in **Table 2**. The travel time for the J-Turn is higher than no build due to the distance traveled to the median U-turn. The westbound left turn travel time is

lower with the Green-T intersection because low volume movements were eliminated, and the signal is more efficient.

Table 2: Travel Time for Westbound Left Turn

	2019 Existing	2039 No Build	2039 Green-T	2039 J-Turn
AM Peak	35.6 sec	44.6 sec	15.5 sec	68.5 sec
PM Peak	31.4 sec	33.5 sec	20.8 sec	66.6 sec

The Green-T intersection would sever full access southwest of US 41, which reduces local mobility and would limit the potential for future residential or commercial future development. The eastbound approach would be right-in-right-out and the westbound through movement would be eliminated. The movements that would be eliminated and the current volumes are summarized in **Table 3**. The alternate access for these movements is CR 300 S/Old US 41, which adds approximately 3 miles.

Table 3: Movements Eliminated in Green-T Intersection

Movement	2019 AM Peak Hour Volume	2019 PM Peak Hour Volume
Eastbound left turn	1 vehicle	10 vehicles
Eastbound through	30 vehicles	11 vehicles
Westbound through	7 vehicles	21 vehicles
Northbound left turn	0 vehicles	0 vehicles

Traffic Safety

High severity, rear end crashes were identified as the most critical safety issue. The southbound approach experienced the most rear end crashes. There is a crest that affects sight distance north of the intersection, that is likely related to the rear ends at the southbound approach.

The J-Turn would do the most to address the rear end crashes at the intersection by eliminating the traffic signal and making the northbound and southbound traffic free-flow. The westbound left turn would incur additional travel time, which may result in vehicles diverting to the adjacent intersection to the north at CR 150 S. The intersection at US 41 and CR 150 S is unsignalized, with stop control for the county road approaches. The crash history does not indicate there is currently a crash problem at the intersection. In the 6-year period between 2014 and 2019, there were 3 crashes. If a significant number of vehicles divert the CR 150 S intersection, there could be an increase in right angle crashes. This does not mean that the J-Turn is not effective. If there is an increase in crashes at the CR 150 S intersection, it could be converted to a right-in-right-out with southbound left turn access as a mitigation to address the issue.

The Green-T intersection would make US 41 southbound free-flow, but the northbound approach would be controlled by a signal to allow the westbound left turn. It will be effective at addressing southbound rear end crashes, but less effective at reducing northbound rear end crashes. The more efficient signal would give more northbound green time, which would reduce queuing and exposure for rear end crashes.

Selected Alternative

The alternatives are evaluated based on crash reduction, mobility, and maintaining acceptable traffic operations (LOS C or higher). The evaluation is summarized in **Table 4**. The J-Turn intersection was selected because it will reduce rear end crashes on the US 41 northbound and southbound approaches by eliminating the existing traffic signal, it accomodates future development, and has acceptable traffic operations. There is the potential for vehicles to use the adjacent intersection to the north to avoid delay, which may result in more crashes. If this occurs, it can be mitigated as discussed in the traffic safety section. The Green-T intersection will reduce rear end crashes on the US 41 southbound approach by removing the signal on that approach, but significant crash reduction is not expected on the US 41 northbound approach.

Table 4: Traffic Operations Analysis

J-Turn Intersection	Green-T intersection
<p><u>Design Year Traffic Operations</u> LOS C or higher</p> <p><u>Mobility</u> No movements eliminated Accommodates future development</p> <p><u>Traffic Safety</u> Reduces rear end crashes on US 41 NB and SB approaches</p>	<p><u>Design Year Traffic Operations</u> LOS C or higher</p> <p><u>Mobility</u> The following movements will be eliminated:</p> <ul style="list-style-type: none"> • Eastbound left turn and through • Westbound through • Northbound left turn <p>Restricts future development west of US 41</p> <p><u>Traffic Safety</u> Reduces rear end crashes on US 41 SB approach only</p>



October 12, 2020

Lynn Elpers
City of Princeton
P. O. Box 15
Princeton, IN 47670

Subject: Initial Notice of Proposed Improvement Project Des. No. 1800223

Dear Lynn Elpers:

Our firm has been assigned the task of utility coordination for the project referenced above by the Indiana Department of Transportation. In accordance with 105 IAC 13-3-1(c), this letter serves as your initial notice of the proposed improvement project Des. No. 1800223 on US 41 in Gibson County, Indiana.

In accordance with 105 IAC 13-3-1(c), the following information is provided. The dates listed in items (4) and (5) below are the currently scheduled dates.

- | | |
|---|--|
| (1) Name or route number: | US 41 |
| (2) Geographical limits: | US 41 at CR 100 W. |
| (3) General description of work: | Intersection Improvement |
| (4) Date approved work plan will be needed: | 10/26/22 |
| (5) Ready for contracts date: | 12/7/22 |
| (6) Name of designer and contact information: | Contact Utility Coordinator Listed Below |
| (7) Major or minor project: | Minor |

In accordance with 105 IAC 13-3-1(d), within 30 days after receiving the initial notice, the utility shall respond in writing with a:

- (1) Description of the type and location of its facilities within the geographical limits of the proposed improvement project; or
- (2) If the utility has determined to the best of their abilities that they do not have facilities within the geographical limits of the improvement project; complete, sign, and return Page 1 of the attached Work Plan.

Additionally, please provide us the name, telephone number, postal address and email address of the person selected as your designated contact for this project to expedite future communications. We will contact Indiana 811 and request locates for this project prior to our survey. If you would prefer to provide us location information by some other means please contact this office to discuss.

Please send your response to:

Julian Hayes
HNTB Corporation
111 Monument Circle
Suite 1200
Indianapolis, IN 46204
Jkhayes@hntb.com



November 12, 2020

Julian Hayes
HNTB Corporation
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

Re: Verification of Existing Facilities for Project Des. No. 1800223

Dear Julian Hayes:

The City of Princeton Utilities have received a copy of the plans showing all existing facilities within the right of way of US 41 at CR 100 W. After reviewing, the City has found an inaccuracy in a missing 4" force main in the plans. The force main runs from west to east crossing US 41 approximately 100' north of intersection US 41 and CR 100 W. The City has marked the approximate location of the 4" force main on the plan in an attachment labeled Intersection Improvement US 41 at CR100 W. There is also a 12" water line 6' from the 4" sewer line. The exact depths and the locations of the sewer and water lines will need to be verified at the location on a later date. If you have any questions, feel free to contact me.

Mike Sullivan
Utilities Superintendent

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated July 2020)

ProjectNumber	SubProjectCode	County	Property
1800184	1800184	Gibson	Hemmer Woods Nature Preserve
1800304	1800304G	Gibson	Hemmer Woods
1800413	1800413B	Gibson	Hemmer Woods Nature Preserve
1800606	1800606	Gibson	Hopkins Family Park

*Park names may have changed. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation, should occur.